

STE20_h	- - - - - MAHLRGFANQHSRV - - -	DPEELFTKL DRI GKSFGEVYKGIDNH[T]K	43
MST3_h	- - - - - MAHSPVQSGLPGMQNLLKADPEELFTKL[E]KGKSFGEVF	KGIDN[R]TQ	47
STLK2_h	- - - - - MAHSPVAVQVPGMQNNIA[DPEELFTKL]ERIGKGSFGEV	FKGIDN[R]TQ	47
STLK3_h	TAPAPAPAPAPAPAPA[P]QDAYELQEVIGS[G]ATAVVQAAACKP[R]Q		57
STE20_h	EVVAIKIIDLEEAED[E]DQEQITVLSQCDSPYIT[TR]YFGSYLKS[TKLWITIMEYLGG	100	
MST3_h	KVVAIKIIDLEEAED[E]DQEQITVLSQCDSPYVTKYYSYLYKDTKLWITIMEYLGG	104	
STLK2_h	QVVAIKIIDLEEAED[E]DQEQITVLSQCDSSYVTKYYSYLYKGSKLWITIMEYLGG	104	
STLK3_h	ERVAIK[R]INLE[KCQTSMDELLKEI]QAMSQCSH[P]N[V]YT[F]VVKDELW[V]MKL[LS]G	114	
STE20_h	[LEFT]YIATIILREITLKGIDYLHSERKIH[R]DIKAANVLL	148	
MST3_h	[DET]QIATIILREITLKGIDYLHS[E]KKIH[R]DIKAANVLL	152	
STLK2_h	[FDEE]FQIATW[K]EILKGIDYLHS[E]KKIH[R]DIKAANVLL	152	
STLK3_h	[GSM]LDIIKKYIVNRGEHKNGV[DE]EAIIATIILK[E]GLDYLHRNGQI[H]RDLKAGN[IL]L	171	
STLK4_h	- - - - - KSGVLDXSTIATIILRE[V]LEGL[E]YLHKXGQI[H]RDLV[KAGN]IL[X]	41	
STE20_h	[SE]Q[G]DV[K]LADF[G]V-A	-	-
MST3_h	[SE]H[G]EV[K]LADF[G]V-A	-	-
STLK2_h	[SE]Q[G]DV[K]LADF[G]V-A	-	-
STLK3_h	[GED]GSV[Q]IAADF[G]VSAFLAT[G]DVT[R]KTFVGT[C]WMAPEV[Q]VRGYDFKA[D]M	227	
STLK4_h	[GED]GSV[Q]IAADF[G]VSAFLAT[G]DII[R]NKV-RKTFVGT[C]WMAPEV[Q]VRGYDFKA[D]I	97	

Fig. 1A

STE20_h
MST3_h
STLK2_h
STLK3_h
STLK4_h

W S L G I T A I E L A K G E P P N S D L H P M R V L F L I P K N S P P T L E - G - - - - -	Q H S K P F K E F 246
W S L G I T A I E L A R G E P P H S E L H P M K V L F L I P K N N P P T L E - G - - - - -	N Y S K P L K E F 250
W S L G I T A I E L A K G E P P N S D M H P M R V L F L I P K N N P P T L Y - G - - - - -	D F T K S F K E F 250
W S F G I T A I E L A T G A A P Y H K Y P P M K V L M L T L Q N D P P T L E T G V E D K E M M K K Y G K S F R K L 284	
W S F G I T A I E L A T G A A P Y H K Y P P M K V L M L T L Q N D P P S L E T G V Q D K E M L K K Y G K S F R K M 154	

STE20_h
MST3_h
STLK2_h
STLK3_h
STLK4_h

V E A C L N K D P R F R P T A K E L L K H K F I T T R Y T K K T S F L T E L I D R Y K R - - - - -	289
V E A C L N K E P S F R P T A K E L L K H K F I I L R N A K K T S Y L T E L I D R Y K R - - - - -	293
I D A C L N K D P S F R P T A K E L L K H K F I V K N S K K T S Y L T E L I D R F K R - - - - -	293
L S L C L Q K D P S K R P T A A E L L K C K F F Q K A K N R E Y L I E K L L T R T P D I A Q R A K K V R R V P G S 341	
I S I C L Q K D P E K R P T A A E L L R H K F F Q K A K N K E F L Q E K T L Q R A P T I S E R A K K V R R V P G S 211	

STE20_h
MST3_h
STLK2_h
STLK3_h
STLK4_h

W K S E G H G E E S S - S E D S D I D G E A E D G E Q G P I W - - - - -	319
W K A E Q S H D D S S - S E D S D A E T D G Q A S G G S D S G - - - - -	323
W K A E Q H S D D E S D S E S T S R E N N T H P E W - - - - -	324
S G H L H K T E D G D W E W S D D E M D E K - S E E G K A A F S Q E K S R R V K E E - - - - -	382
S G R L H K T E D G G W E W S D D E F D E E - S E E G K A A I S Q L R S P R V K E S I S N S E L F P T T D P V G T 267	

STE20_h
MST3_h
STLK2_h
STLK3_h
STLK4_h

--- T F P P T I R P S P H S K L H K G T A L H S S Q K P A E P V K 350	
--- D W I F T I R E K D P K N L E N G A L Q P S D L D R N K M K D 354	
--- S F T T V R K K P D P K K V Q N G A E Q D L V Q T L S - - - - -	351
--- N P E I A V S A S T I P E Q I Q S L S V H D S Q G P P N A N E 413	
--- L L Q V P E Q I S A H L P Q P A G Q I A T Q P T Q V S L P P T A E P A K T A Q A L S S G S Q E T K I P - - - - -	320

Fig. 1C

Title: PAK5 SCREENING METHODS

Inventor(s): Gregory PLOWMAN
et al

Attorney Docket No.: 034536-06888
et al.

Inventor(s): Gregory PLOWMAN

Attorney Docket No.: 034536-0688
et al.

Ste20_h	EVVAIKIIDLEEAEDIEIDIQQEITIVLSQCDSPYITRYSYLSKSTKLWIIIMEYLG	100
T19A5.2_ce	RVVAIKIIDLEQAEDIEIDIQQEIQVLSQCDSQYVTKYFGSFLKGSKLWIIMEYLG	114
Pak_sp	LSVAIKKMNINQQPKKEF-IVNEILVMKSHHHKNIIVNFIIDTFFYKSELWMVMEYMRG	82
STLK5_h		0

site20_h	D F G V A G Q L T D T Q I K R N T F V G T P F - - - - -	W M A P E V I K Q S A - - - - -	D I W S L G I T A	205
19A5.2_ce	D F G V A G Q L T E T V K K R I T F V G S P F - - - - -	W M A P E L I K Q S S - - - - -	D I W S L G I T A	219
ak_sp	D F G F C A Q I D S N M T K R T I M G T P Y - - - - -	W M A P E V V T R K E - - - - -	D V W S L G I M A	187
TLK5_h	G L R S N L S M I S A G Q R Q V V H D F P K Y S V K V L P W L S P E V L Q Q N L Q G Y D A K S D I Y S V G I T A	W M A P E V I K Q S A - - - - -	D I W S L G I T A	112

te20_h	IELAK[GEPVNSDLH[PMRVL[F[LI]PK-N[S[PPT[LE[G-Q-	- - - - -	238
19A5.2_ce	IELAN[GEPPH[SDLH[PMRVL[F[LI]PK-N[P[PVL[Q[G[SQ-	- - - - -	253
ak_sp	IEMVE[GEPYLNENPLRA[YL[LI]ATIGT[TPKISRPEL-	- - - - -	222
TLK5_h	CELAN[GHV[PFFK[DMPATOMLLEKLN-G[IV[P[C[D-TSTIPAFFITMSPSRSSVANSGLS	- - - - -	167

Fig. 2B

Title: PAK5 SCREENING
METHODS
Inventor(s): Gregory PLOWMAN
et al.
Attorney Docket No.: 034536-1

Title: PAK5 SCREENING
METHODS

Inventor(s): Gregory PLOWMAN
et al.

Attorney Docket No.: 034536-0688

ZC504.4_ce
NIK_m
ZC1_h
ZC2_h
ZC3_h

[MSSGEDE --- IDLNSLRDPAGIFELIEVVGNGTYGQYYKGRHVKTQLAIAKIMNINE 58
MANDPAKSLVDidLSLRDPAGIFELVEVVGNGTYGQYYKGRHVKT[V]-AAIKVMDVTE 69
MANDPAKSLVDidLSLRDPAGIFELVEVVGNGTYGQVHEGRHVKT[GQLAIAIKVMDVTE 60
----- -AFGEVYEGRHVKT[GQLAIAIKVMDVTE 60
----- -AFGEVYEGRHVKT[GQLAIAIKVMDVTE 28
----- -AFGEVYEGRHVKT[GQLAIAIKVMDVTE 28

ZC504.4_ce
NIK_m
ZC1_h
ZC2_h
ZC3_h

[DEED[EIKLEINMLKK[SHHRN[ATYYGAFI[KLPSSTGKH[DQLWLVMEEFCGS[GSIITDLVK 116
DEEEIT[LEINMLKKYSHHRN[ATYYGAFI[KKSPPGHD[-DQLWLVMEEFCGAGSITDLVK 117
DEEEIKLEINMLKKYSHHRN[ATYYGAFI[KKSPPGHD[-DQLWLVMEEFCGAGSITDLVK 118
DEEEIKQEINMLKKYSHHRN[ATYYGAFI[KKNPPGMD[-DQLWLVMEEFCGAGS[VITDLIK 84
DEEEIKQEINMLKKYSHHRN[ATYYGAFI[KKSPPGND[-DQLWLVMEEFCGAGS[VITDLVK 84

6/76

ZC504.4_ce
NIK_m
ZC1_h
ZC2_h
ZC3_h

[NTKGGS[KEE[WIAYICREILRGY[HLHQSKV[HRDIKGQNVL[TD[SAEVKLVDFGVSAQL 176
NTKGNTLKEDWIA[ISREILRG[HLH[RRV[HRDIKGQNVL[TD[ENAEVKLVDFGVSAQL 177
NTKGNTLKEDWIA[ISREILRG[HLH[RRV[HRDIKGQNVL[TD[ENAEVKLVDFGVSAQL 178
NTKGNTLKEE[WIAYICREILRG[SHLHQHKV[HRDIKGQNVL[TD[ENAEVKLVDFGVSAQL 144
NTKGNA[ALKED[CIAYICREILRG[HLHA[HKV[HRDIKGQNVL[TD[ENAEVKLVDFGVSAQL 144

ZC504.4_ce
NIK_m
ZC1_h
ZC2_h
ZC3_h

[DKTVGRRNTFIGTPYWMAP[VIACD[SP[EATYD[SRSIDLW[SLGITA[LEMAEGH[PPLCDMHP 236
DRTVGRRNTFIGTPYWMAP[VIACDENPDATYD[RSIDLW[SCGITA[TEMAEG[GPP[CDMHP 237
DRTVGRRNTFIGTPYWMAP[VIACDENPDATYD[YRSIDLW[SCGITA[TEMAEGAPPLCDMHP 238
DRTVGRRNTFIGTPYWMAP[VIACDENPDATYD[FKSIDLW[SLGITA[TEMAEGAPPLCDMHP 204
DRTVGRRNTFIGTPYWMAP[VIACDENPDATYD[YRSIDLW[SLGITA[TEMAEGAPPLCDMHP 204

Fig. 3A

METHODS

Inventor(s): Gregory PLOWMAN

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ZC504.4_ce
NIK_m
ZC1_h
ZC2_h
ZC3_h

MRALFLIPRNPPPKL [KRNKKW] [KKFETFIETV] [VKD] [YHQRPYTGAI] [LHPFIKEQPH] [EQT] 296
MRALFLIPRNPPPLK -SKKWSKKFFSFIEGCCLVKNYMQRPSTEQLLKHPFIRDQPNERQ 296
MRALFLIPRNPPPLK -SKKWSKKFFSFIEGCCLVKNYMQRPSTEQLLKHPFIRDQPNERQ 297
MRALFLIPRNPPPLK -SKKWSKKFQSFIESCLVKNHSSQRPAATEQLM [KHPFIRDQPNERQ] 263
MRALFLIPRNPPPLK -SKKWSKKFQSFIESCLVKNHSSQRPAATEQLM [KHPFIRDQPNERQ] 263
MRALFLIPRNPPPLK -SKKWSKKFQSFIESCLVKNHSSQRPAATEQLM [KHPFIRDQPNERQ] 263

ZC504.4_ce
NIK_m
ZC1_h
ZC2_h
ZC3_h

IRHSIKEHIDRNRRVKKQDADYEYSGSSEDD[RE]PSPNNRDDSESS---SMI[PM]DN[TL]RK[G]F[Q] 353
 VRIQLKDHIDRTRKKRGEKDET[YEYSGSSEEE]EVPEQ[GE]PSS[IVN]VPGESTLRRDFL 356
 VRIQLKDHIDRTRKKRGEKDET[YEYSGSSEEE]EVPEQ[GE]PSS[IVN]VPGESTLRRDFL 357
 VRIQLKDHIDRTRKKRGEKDET[YEYSGSSEEE]-NDS[GE]PSS[ILN]P[RESTL]RRDFL 321
 VRIQLKDHIDRTRKKRGEKDET[YEYSGSSEEE]EVPEQ[GE]PSS[IVN]VPGESTLRRDFL 322

R H S P A S R P R P S P Q Q S H P A P H L A D L A N Y E K R R R S E R E R E R E R E R Q A H H A M P I A R V S A S V 473
 E Q Q K E Q R R R L E E Q Q R R E A R R Q Q E R E Q R R R E Q E K R R L E E L E R R K E E E R R R A E E E K R 458
 E Q Q K E Q R R R L E E Q Q R R E A R R Q Q E R E Q R R R E Q E K R R L E E L E R R K E E E R R R A E E E K R 459
 E E Q K E Q R R R L E E Q Q R R E A R R Q Q E R E Q R R R E Q E K R R L E E L E R R K E E E R R R A E E E K R 460
 E E Q K E Q R R R L E E Q Q R R E A R R Q Q E R E Q R R R E Q E K R R L E E L E R R K E E E R R R A E E E K R 461

7176

3B
Fig.

Title: PAK5 SCREENING
METHODS

Inventor(s): Gregory PLOWMAN

et al.

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ZC504.4_ce	P[P]Q Q S R K M S E P [I] L I T H V K P E D [D] V L A S E L S K [M] G G - - - - -	508
NIK_m	R[V] E R E Q E Y I R R Q L E E E Q R H [L] E T I L Q Q Q I L Q Q Q A M I L I - - - - -	493
ZC1_h	R[V] E R E Q E Y I R R Q L E E E Q R H [L] E V L Q Q Q I L Q Q Q A M I L E C R W R E M E E H R Q A [A] E R L Q R Q L Q Q E Q A 519	
ZC2_h	R[A] E [H] E Q E Y [K] R Q L E Q - - - - -	435
ZC3_h	Q[A] E R E Q E Y I R R Q L E E E Q R Q L E I L Q Q Q I L Q Q Q A L L E Y K R K Q L E E Q R Q O S [S] E R L Q R Q L Q Q E H A 469	
ZC504.4_ce	[H] H N G R S R E E S - M S P P P A P [P] P R E A S I S S I T D T I D V G E L D [D] N G A Q A [E] W D D L K D I M M 561	
NIK_m	- - - - - [H] D H R R R P H A [Q] - Q [Q] P P P P Q Q D R S [K] P S [H] A P [P] K P H Y D P A D [A] R E V [Q] W S H L A S L K N 548	
ZC1_h	[Y] L I S L Q H D H R R R P H P [Q] H S [Q] Q P P P P Q Q E R S [K] P S [H] A P [P] K A H Y E P A D [A] R E V E D [D] R F R K T N H S 579	
ZC2_h	[Y] L V S L Q H Q R - - - - - Q E Q R P V E K P L Y H Y K E G M S P S E K P A W A [K] E V E E R S R L L N R Q S 484	
ZC3_h	[Y] L K S L Q Q Q Q Q Q Q Q L Q K - Q Q Q Q Q Q Q Q L P G D R K P L Y H Y G R G M N P A D K P A W A R E V E R T R M N K Q Q 528	
ZC504.4_ce	[N] G E G T I R G - - - - -	
NIK_m	[N] Y S P V S R S H S F S D P S P K F A H H H L R S Q D P C P P S R S E G L [S] Q S S D S K S E V [P] E P T Q K - - - - -	595
ZC1_h	S P E A Q S K Q - - - - -	599
ZC2_h	S P A M P H K V - - - - -	620
ZC3_h	[N] S P L A K S K - - - - -	
ZC504.4_ce	P N K P [P] P T P T D G E N T L V S D V R R N G N G - - - - -	
NIK_m	[N] Y S P V S R S H S F S D P S P K F A H H H L R S Q D P C P P S R S E G L [S] Q S S D S K S E V [P] E P T Q K - - - - -	595
ZC1_h	T G R V L E P P V P S R S E S F S I S N G N S E S V H P A L Q R P A E - - - - -	599
ZC2_h	A N R L S D P N L P P R S E S F S I S G V Q P A R T P P M L R P V D P Q I P H 531	
ZC3_h	- P G S - T G P [P] P Q A S P G P P G P L S Q T P P M Q R P V E P Q E G P H 574	

Title: PAK5 SCREENING

Inventor(s): Gregory PLOWMAN

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ZC504.4_ce QP[N]GFQ----NSDSR----SSIQHSFSNRDRE[K]S[FGVGY]FGGGAGAGGT[VNRPG----755
 RSLK[P]AGEV----DLTAL----AKELRAVEDV[RP]H[KVTDY]SSSSEESGT[TD]EEEEDV[ED]777
 RPLKPA----DLTAL----AKELRAVEDV[RP]H[KVTDY]SSSSEESGT[TD]EEEEDV[ED]783
 RPSRPA[SY]KAIDE[DLTAL]AKE[RELRIEETNRP]M[KVTDY]SSSSEESGT[TD]EEEEDV[ED]785
 RPA[DFV]----L[KERTLDEAPRPPK]KAM[DPY]SSSSEESGT[TD]EEEEDV[ED]837
 NIK_m

3D
Fig.

Title: PAK5 SCREENING
METHODS

Inventor(s): Gregory PLOWMAN
et al.

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ZC504.4_ce
NIK_m
ZC1_h
ZC2_h
ZC3_h
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- 755

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- 837

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- 845

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ZC2_h
ZC3_h
ZC4_h
- 772

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- K[SFTMFV
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- 907

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ZC4_h
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- 1054

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[S GMLLD
- 65

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METHODS

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ZC504.4_ce	D Q M T V L E G Q N I L A T I S G R K R I R V Y Y L S W L R Q K I L R T E G A G S A N T T E K R N G W V N V G D	889
NIK_m	Q Q M D V L E G L N V L V T I S G K K D K I L R V Y Y L S W L R N K I L H N D P E V	- - - E K K Q G W T T V G D
ZC1_h	Q Q M D V L E G L N V L V T I S G K K D K I L R V Y Y L S W L R N K I L H N D P E V	- - - E K K Q G W T T V G D
ZC2_h	Q Q M D V L E G L N V L V T I S G K K N K I L R V Y Y L S W L R N R I L H N D P E V	- - - E K K Q G W I T V G D
ZC3_h	Q Q M D V L E G L N I L I I S G K R N K L R V Y Y L S W L R N K I L H N D P E V	- - - E K K Q G W T T V G D
ZC4_h	R Q I Q V L E P L N I L I I S G H K N R L R V Y H L T W L R N K I L N N D P E S	- - - K R R Q E E M L K T E E A C

ZC504.4_ce	- - - - - Q G A I H F K I V Y E R I K F L V G I E S S I E I Y A W A P K P Y H K F M S F K S F G S L S H V P L I V	944
NIK_m	- - - - - E G C V H Y K V V K Y E R I K F L V I A L K S S V E V Y A W A P K P Y H K F M A F K S F G E L L H K P L L V	1068
ZC1_h	- - - - - E G C V H Y K V V K Y E R I K F L V I A L K S S V E V Y A W A P K P Y H K F M A F K S F G E L V H K P L L V	1074
ZC2_h	- - - - - E G C I H Y K V V K Y E R I K F L V I A L K N A V E I Y A W A P K P Y H K F M A F K S F A D L Q H K P L L V	1132
ZC3_h	- - - - - M E G C G H Y R V Y K Y E R I K F L V I A L K S S V E V Y A W A P K P Y H K F M A E K S F A D L P H R P L L V	1161
ZC4_h	K A I D K I T G C E H F S Y L Q H E E T T Y I A I A L K S S I H L Y A W A P K S F D E S T A I K V E P T L D H K P V T V	180

ZC504.4_ce	D L T V E D N A R L K V L Y G S T G F H A I D S A A V Y D I Y T P H C T V V I P N S N G M Q I L	1004
NIK_m	D L T V E E G Q R L K V I Y G S C A G F H A V D V D S G S V Y D I Y L P T H I Q C S T K P H A I I I I P N T D G M E L L	1128
ZC1_h	D L T V E E G Q R L K V I Y G S C A G F H A V D V D S G S V Y D I Y L P T H I Q C S I K P H A I I I I P N T D G M E L L	1134
ZC2_h	D L T V E E G Q R L K V I F G S H T G F H V I D V D S G N S Y D I Y T P S H I Q G N I T P H A I I V I L P K T D G M E M L	1192
ZC3_h	D L T V E E G Q R L K V I Y G S S A G F H A V D V D S G N S Y D I Y I P V H I O S Q I T P H A I I F L P N T D G M E M L	1221
ZC4_h	D L A I G S E K R L K I F F S S A D G Y H L I D A E S E V M S D V T L P K N P L E I I T P Q N I I I L P D C L G I G M M	240

ZC504.4_ce	LCYDNEGVYVNTYGRMTK[NVVLQWGE[MPSSVAYI[STGQIMGWGNKAIEIRSVDTGHLDGV	1064
NIK_m	VCYDEGVYVNTYGRITKDVVLQWGE[MPSSVAYI[RSNQ[TMGWGEKAIEIRSVETGHLDGV	1188
ZC1_h	VCYDEGVYVNTYGRITKDVVLQWGE[MPSSVAYI[RSNQ[IMGWGEKAIEIRSVETGHLDGV	1194
ZC2_h	VCYDEGVYVNTYGRITKDVVLQWGE[MPSSVAYI[HSNQ[IMGWGEKAIEIRSVETGHLDGY	1252
ZC3_h	LCYDEGVYVNTYGRITKDVVLQWGE[MPSSVAYI[SNQ[IMGWGEKAIEIRSVETGHLDGV	1281
ZC4_h	LTNAEALSWEANEQLF[KILEMW[KDIPSS[TAFFCTDRTTGWGOKAIEVRSLOSSRVLSE	300

ZC504.4_ce	F M H K K A Q K L K F L C E R N D K V F F S S A K G G S C Q I Y F M T L N K P G I T N W	1109
NIK_m	F M H K R A Q R L K F L C G R N D K V F F S S V R S G G S Q V Y F M T L G R T S L L S W	1233
ZC1_h	F M H K R A Q R L K F L C E R N D K V F F A S V R S G G S Q V Y F M T L G R T S L L S W	1239
ZC2_h	F M H K R A Q R L K F L C E R N D K V F F A S V R S G G S Q V F F M T L N R N S M M N W	1297
ZC3_h	F M H K R A Q R L K F L C E R N D K V F F A S V R S G G S S O V Y F M T L N R N R I M N W	1326
ZC4_h	L K R R S I K K L R E L C T R G D K L F F T S T L R N H H S R V Y F M T L G K L E E L O S N Y D V	349

Fig. 3G

Title: PAK5 SCREENING METHODS

Inventor(s): Gregory PLOWMAN

Attorney Docket No.: 034536-0688
et al.

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KHS1_h	5	LRPAADILRRNPQQDYELVQRVGS GTYGDVYKARNVHTGELAAVKIIKLEPGDDFSLIQQ
KHS2_h	1	MNP GFDLSRNPQEDFELIQRIGSGT YGDVYKARNVNTGELAAIKVIKLEPGEDFAV VQQ
* * * * *		
KHS1_h	65	EIFMVKECKHCNIVAYFGSYLSREKLWICMEYCGGSLQDIYHVTGPLSELQIAYYVC RET
KHS2_h	61	EIIMMKDCKHPNIVAYFGSYLRRDKLWICMEFCGGSLQDIYHVTGPLSELQIAYYV SRET
* * * * *		
KHS1_h	125	LQGLAYLHTKGKMH RDIKGANIL LTDHGDVKLADFGVA KITATIAKRKSFIGT PYWMAP
KHS2_h	121	LQGLYYLHSKGKMH RDIKGANIL LTDNGHVKLADFGVSAQITATIAKRKSFIGT PYWMAP
* * * * *		
KHS1_h	185	EVAAVEKNGGYNQLCDI W AVGITAIELGELQPPMFDLHPMRA LFLMSKSNFQPPK LKD KT
KHS2_h	181	EVAAVERKG GYNQLCDI W AVGITAIELAELQPPMFDLHPMRA LFLMTKSNFQPPK LKD KM
* * * * *		
KHS1_h	245	KWSSTFHNFVVKIALTKNPKKRPTAERLLTHTFVAQPGLSRALA VELL D KVNNP DNHAH Y T
KHS2_h	241	KWSNSFHHFVKMALT KNPKKRPTAEKLLQHPFVTQH-LTRSLATEELL D KVNNPD-HSTYH
* * * * *		
KHS1_h	305	EADDDDFEPHAIIRHTIRSTN NARAERTASEINF DKLQFEPPLR KETEARD E MGLS--
KHS2_h	299	D FDDDDPEPLVAVPHRIHSTS RNVREEKTRSEITFGQVKFDPPPLRKETEPHHELP DSDGF

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Fig. 4A

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Inventor(s): Gregory PLOWMAN

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Fig. 4B

KHS1_h	664	FDFFPLPSPLNFFEMLVPIEQEYPMVCCVAISKGTESNQVQFETINLNASSWFTETIAGAGS	723
KHS2_h	714	IDFFPIPCPLRMFEMLVVPEQEYPLVCVGVSRGDFNQVVRFETVNPNSTSSWFTET-SDT	771

KHS1_h	724	QQLDSIHVTQLERDTVLVCLDKFVKIVNLQGKLKSSKKLASELSFDFRIESVVCQLQDSVL	783
KHS2_h	772	PQTNVTHVTQLERDTILVCLDCCCIKIVNLQGRLKSSRKLSSELTFFDQIESIIVCQLQDSVL	831

KHS1_h	784	AFWKHGMQGKSFKSDEVTQEISDETRVFRLGSDRVVLESRPTENPTAHSNLYILAGHE	843
KHS2_h	832	AFWKHGNQGRSFRSNEVTQEISDSTRIFRLGSDRVVLESRPTDNPTANSNLYILAGHE	891

15/76	KHS1_h	844 NSY	846
	KHS2_h	892 NSY	894

Fig. 4C

Title: PAK5 SCREENING
METHODS
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SULU_ce	M A P A V L Q K P G W I K D P S I A L F S N K D P E Q R Y Q D L R E I G H G S F G A V Y F A Y D K K N E Q T V A I K K 60
SULU1_h	- - - - M R K G V L K D P E I D D L F Y K D D P E E L F I G L H E I G H G S F G A V Y F A T N A H T N E V V A I K K 54
SULU3_m	- - M P S T N R A G S L K D P E I A E L F F K E D P E K L F T D L R E I G H G S F G A V Y F A R D V R T N E V V A I K K 58

SULU_ce L R [GMREVEIAAI CSQT [DA [RYLHS [L K IHRDIKAGNILL SDHAIIVKLADFGSASL V DP 180
 SULU1_h H K [PLQVEVIAAI THGAL H G LAYLHS [L K IHRDIKAGNILL SDHAIIVKLADFGSASL V DP 180
 SULU3_m H K [PLOVEVIAAI THGAL H G LAYLHS [L K IHRDIKAGNILL SDHAIIVKLADFGSASL V DP 180
 SULU1_h H K [PLOVEVIAAI THGAL H G LAYLHS [L K IHRDIKAGNILL SDHAIIVKLADFGSASL V DP 180

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LI QRTK[NM]V[LELDN]F[QYK[KMRKLMYLDTEGEGSENGASDDLDFHGN
EANSI GRADS 3600
SULU1_h LI QRTKDAVRELDNLQYRKMK[KI[F
SULU3_m LI QRTKDAVRELDNLQYRKMK[KI[F
SULU13_h LI QRTKDAVRELDNLQYRKMK[KI[F

Fig. 5A

Title: PAK5 SCREENING

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SULU_ce ASSRASLT SFRSMQSSGGAGL LVSTNTT GAMDNVHGS SGGNGSSSSAARRRPPPIPS 420
 SULU1_h - - - - -
 SULU3_m - - - - -
 SULU3_h - - - - -

SULU_ce QMSSSTS [GVGT] M P S H G S V G A S I T A I A V N P T P S P S E P I P T S Q P T S K S E S S S - S I L E T A H D 479
 SULU1_h Q E D E E D S E H G T S L N R E M D S L G S N H S I P S M S V S T G S Q S S S V N S M Q E V M D E S S S E L V M M H D D 384
 SULU3_m Q E E E E Q D H G V G R T G T V N S V G S N Q S I P S M S I S A S S S Q S S S V N S L P D A S D D K S - E L D M M E G D 379
 SULU3_h Q E E E E Q D H G V G R T G T V N S V G S N Q S I P S M S I S A S S S Q S S S V N S L P D V S D D K S - E L D M M E G D 173

SULU_ce DPLDTSI - - - - -
 17 SULU1_h ESTINS S S V V H K K D H V F T R D E A G H G D P R P E P R P T Q S V Q S Q A L H Y R N R E R F A T I K S A S L V 444
 SULU3_m H T V M S N S S V I H L K P E E E N Y Q E E G D P R T R A S D P Q S P P Q V S R H K S H Y R N R E H F A T I R T A S L V 439
 SULU3_h H T V M S N S S V I H L K P E E E N Y R E E G D P R T R A S D P Q S P P Q V S R H K S H Y R N R E H F A T I R T A S L V 233

SULU_ce N Q E Q E Y T K E N N M Y E Q M S K Y K H L R Q A H H K E L Q Q F E E R C A L D R E Q L R V K M D R E L E Q L T T Y 581
 SULU1_h T R Q I H E Q E N E L R E Q M S G Y K R M R R Q H Q K Q L I A L E N K L K A E M D E H R L K L Q K E V E T H A N N S 504
 SULU3_m T R Q M Q E H E Q D S E L R E Q M S G Y K R M R R Q H Q K Q L M T L E N K L K A E M D E H R L R L D K D L E T Q R N N F 499
 SULU3_h T R Q M Q E H E Q D S E L R E Q M S G Y K R M R R Q H Q K Q L M T L E N K L K A E M D E H R L R L D K D L E T C R N N F 293

SULU_ce S K E K M R V R C S Q N N E L D K R K K D I E D G E K K M K K T K N S Q N Q Q Q M K L Y S A Q Q L K E Y K Y N K E A Q K 641
 SULU1_h S I E L E K L A K K Q V A I I E K E A K V A A D E K K F Q Q Q I L A Q Q K K D L T T F L E S Q K K Q Y K I C K E K I K 564
 SULU3_m A A E M E K L I K K H Q A M E K E A K V M A N E E K K F Q Q H I Q A Q Q K K E L N S F L E S Q K R E Y K L R K E Q L K 559
 SULU3_h A A E M E K L I K K H Q A M E K E A K V M S N E E K K F Q Q H I Q A Q Q K K E L N S F L E S Q K R E Y K L R K E Q L K 353

Fig. 5B

Title: PAK5 SCREENING
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SULU_ce TR[LRSSLNM-[P R S T Y E N A M K E V K A D L N R V K D A R E N D F D E K L R A E L E D E I V R Y R R Q Q L S N L H 700
SULU1_h E E M N E D H S T P K K E K Q E R I S K H K E N L Q H T Q A E E A H L L T Q Q R L Y Y D K N C R F F K R K I M I K R H 624
SULU3_m E E L N E N Q S T P K K E K Q E W L S K Q K E N I Q H F Q A E E E A N L L R R Q Y L E L E C R R F K R R M L L G R H 619
SULU3_h E E L N E N Q S T P K K E K Q E W L S K Q K E N I Q H F Q A E E E A N L L R R Q R Q Y L E L E C R R F K R R M L L G R H 413

SULU_ce Q L E E Q I D D E D V N V Q E R Q M D T R H G L L S K Q H E M T R D L E I Q H L N E L H A M K K R H L E T Q H E A F S A 760
SULU1_h E V E Q Q N I R E E L N K K R T Q K E M E H A M L I R H D E S T R E L E Y R Q L H T L Q K L R M D L I R L Q H Q T E L L E 684
SULU3_m N L E Q D L V R E E L N K R Q T Q K D L E H A M L L R Q H E S M Q E L E F R R H L N T I Q K M R C E L I R L Q H Q T E L L T 679
SULU3_h N L E Q D L V R E E L N K R Q T Q K D L E H A M L L R Q H E S M Q E L E F R R H L N T I Q K M R C E L I R L Q H Q T E L L T 473

SULU_ce S Q N E Y T Q R Q Q D E L R K K H A M Q S R Q Q P R D L K I Q E A Q I R K Q Y R Q V V K T Q T R Q F K L Y L T Q M V Q V 820
18/76 SULU1_h N Q L E Y N K R R E R E L H R K H V M G L R Q Q P K N L K A M E M Q I K K Q F Q D T C K V Q T K Q Y K A L K N H Q L E V 744
SULU3_m N Q L E Y N K R R E R E L R R K H V M E V R Q Q P K S L K S K E L Q I K K Q F Q D T C K I Q T R Q Y K A L L R N H I L L E T 739
SULU3_h N Q L E Y N K R R E R E L R R K H V M E V R Q Q P K S L K S K E L Q I K K Q F Q D T C K I Q T R Q Y K A L L R N H I L L E T 533

SULU_ce V P K D E Q K E L T S R L K Q D Q M Q K V A L A S Q Y E S Q I K K W V Q D K T V K L E S W Q E D E Q R V L S E K T E K 880
SULU1_h T P K N E H K T I L K T D E O T R K L A I L A E Q Y E Q S I N E M M A S Q A L R L D E A Q E A E C Q A L R L Q L Q Q 804
SULU3_m T P K N E H K A I T P K S E H K A V L K R L K E E O T R K L A I L A E Q Y D H S I N E M L S T Q A L R L D E A Q E A E C Q V L K M Q L Q Q 593
SULU_ce E L E E L I A Y Q K K T R A T L E E Q I K K E R T A L E E R I G T R R A M L E Q K I I E E R E Q M G E M R R L K K E Q I 940
SULU1_h E M E L L N A Y Q S K I K M Q T E A Q H E R E L Q K L E Q R V S I R R A H L A A L Q K E R S E R I K N L 864
SULU3_h E L E L N A Y Q S K I K M Q A E A Q H D R E L L R E L E Q R V S I R R A H L E Q K I I E E M L A L Q N E R T E R I R S L 653

Fig. 5C

SULU_ce R D[R]HSQ[ER]HRL ENH F V[R]T[G]S T S R S S G GIA P G V G N S S S I Q M A M
SULU1_h L E[R]Q[ER]E I E T F D M E S L R M[G]F G N L V T L D F P K E D Y R
SULU3_h L E[R]Q[ARE]I E A F D S E S M R L[G]F S N M V L S N L S P E A F S H S Y P G A S G W S H N P T G G P G P H W G H P M G 713

SULU3_h G P P Q A W G H P M Q G G P Q P W G H P S G P M Q G V P R G S S M G V R N S P Q A L R R T A S G G R T E Q G M S R S T S 773

SULU3_h V T S Q I S N G S H M S Y T

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Fig. 5D

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1 MAFANFRRIILRLSTFEKRKSREYEHVRRDLDPNDVWEIVGELGDGAFGKVYKAKNKE⁶⁰
1 MAFANFRRIILRLSTFEKRKSREYEHVRRDLDPNEVWEIVGELGDGAFGKVYKAKNKE⁶⁰

61 LAAAKVIEETKSEEELEDYIVIEIILATCDHPYIVKLLGAYYDGKLVWIMIEFCPGGAVDA 120
61 LAAAKVIEETKSEEELEDYIVIEIILATCDHPYIVKLLGAYYHDGKLVWIMIEFCPGGAVDA 120

121 IMLELDRGLTEPQIQVVCRQMLEALNFLHGKRIIHRLKAGNVLMTLEGDIRLADFGVSA 180
121 IMLELDRGLTEPQIQVVCRQMLEALNFLHSKRIIHRLKAGNVLMTLEGDIRLADFGVSA 180

181 KNLKTLQKRDSFIGTPYWWMAPEVVL²⁰
181 KNLKTLQKRDSFIGTPYWWMAPEVVMCETMKDTPYDYKADIWSL GITLIEMAQIEPPHHEL 240

181 KNLKTLQKRDSFIGTPYWWMAPEVVL²⁰
181 KNLKTLQKRDSFIGTPYWWMAPEVVMCETMKDTPYDYKADIWSL GITLIEMAQIEPPHHEL 240

241 NPMRVLLKIAKSDDPPTLLTPSKWSVEFRDFLKIALDKNPETRPSAAQLLQHPFVSRVTSN 300
241 NPMRVLLKIAKSDDPPTLLTPSKWSVEFRDFLKIALDKNPETRPSAAQLLHPFVSSSITSN 300

301 KALRELVAEAKAEVMEETIEDGREDEEEEDAVDAVPPPLVNHTQDSANVTQPSLD²⁰
301 KALRELVAEAKAEVMEETIEDGRDEEEEDAVDAASTLENHTQNSSEVSPPSLNADKPL³⁶⁰

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Fig. 6A

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LOK_m 361 S-STPLPPSQPQEPVNGPQSQPSGDGPLQTTSPADGLSKNDNDLKVPVPLRKSRPLSMSDA 419
GEK2_h 361 SPSTPLAPSQSQDSVNEPCSQPSGDRLSQTTSPPVAPGNENGAVPVPLRKSRPVSMSDA 420

* * * * *

LOK_m 420 RIQMDEEKQIPDQDENPSPAAASKSQKANQSRPNSSALELTGGEALTNGGLELPSSVTPSH 479
GEK2_h 421 RIQVAAQEKKQVAEGGDLSPAAANSOKASOSRPNSSALELTGGEKLAANGSLEPPAOAAPGP 480

* * * * *

LOK_m 480 SKRASDCCSNLSTSESMYGTSLSLNKETGSLSLKGSKLHNKTLKRTRRFVVDGVEV 539
GEK2_h 481 SKRDSDCSSLCCTSESMYGTNLSTDLSLNKEMGSLSIKDPKLYKKILKRTIRKEVVDGVEV 540

卷之三

LOK_m 540 SITTSKIISEDEKKDEEMRFLRRQELRELRLLQKEEHRNQTQLSSKKHELQLEQMHKRFEEQ 599
GEK2_h 541 SITTSKIISEDEKKDEEMRFLRRQELRELRLLOKEEHRNQI01SNKHEI01E0MHKRFEEQ 600

卷之三

0_K_m 600 EINAKKKFYDVELENLERQQKQQVEKMEQDHYSVRRKEAKRIRLEQDQRDYAKFQEQLKQM 659
5EK2_h 601 EINAKKKFFDTELENLEROOKOOVEKMEODHAYRRREARRIRIEOF01KIM 660

* * * * *

OK_m 660 K E V K S E V E K L P R Q Q R K E S M K Q K M E E H S Q K K Q R L D R D F V A K Q K E D L E L A M R K L T T E N R R E 719
GEK2_h 661 K E V K N E V E K L P R Q Q R K E S M K Q K M E E H T O K K O L L D R D F V A K Q K E D L E L A M K R I T T I O N R R E 720

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Fig. 6B

LOK_m	720	I C D K E R D C L S K K Q E L L R D R E A A L W E M E E H Q L Q E R H Q L V K Q Q L K D Q Y F L Q R H D L L T R K H E K E	779
GEK2_h	721	I C D K E R E C L M K K Q E L L R D R E A A L W E M E E H Q L Q E R H Q L V K Q Q L K D Q Y F L Q R H E L L R K H E K E	780

LOK_m	780	R E Q M Q R Y N Q R M M E Q L K V R Q Q K E Q K A R L P K I Q R S D G E T R M A M Y K K S L H I N G A G S A S E Q R E K I	839
GEK2_h	781	R E Q M Q R Y N Q R M I E Q L K V R Q Q K E Q K A R L P K I Q R S E G K T R M A M Y K K S L H I N G G S A A E Q R E K I	840

LOK_m	840	K Q F S Q Q E E K R Q K A E R L Q Q Q K H E H Q M R D M V A Q C E S N M S E L Q Q L Q N E K C Y L V E H E T Q K L K	899
GEK2_h	841	K Q F S Q Q E E K R Q K S E R L Q Q Q K H E N Q M R D M L A Q C E S N M S E L Q Q L Q N E K C H L L V E H E T Q K L K	900

LOK_m	900	A L D E S H N Q S L K E	911
GEK2_h	901	A L D E S H N Q N L K E	912

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Fig. 6C

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et al.

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PAK1_h	M S N N G L D I Q D K P P A P P M R N T S T M I G S K D A G T L N H G S [K P L P P N P E E K K K D R F Y R S I L -	59
PAK65_h	M E E T Q Q K S H E L L S A - - - - -	
PAK3_m	- M S D S L D N E E K P P A P P L R - - - - -	40
PAK4_h	- M F R K K K K R P E I S A P Q N F Q H R V H T S F D P K E G K F V G L P P Q W Q N I L D T I L R R P K P V V D P	56
PAK1_h	P G D K T N K K K E K R P E I S P S D F E H T I H V G F D A V T G E F T G M P E Q W A R L L Q T S N I T K S - - -	115
PAK65_h	G T E K G S K K K E K R P E I S P S D F E H T I H V G F D T V T G E F T G M P E Q W A R L L Q T S N I T K L - - -	96
PAK3_m	G G D K T N K K K E K R P E I S P S D F E H T I H V G F D A V T G E F T G I P E Q W A R L L Q T S N I T K L - - -	110
PAK4_h	- M F R K K K K R P E I S A P Q N F Q H R V H T S F D P K E G K F V G L P P Q W Q N I L D T I L R R P K P V V D P	56

PAK1_h	- - - - -	
PAK65_h	- - - - -	
PAK3_m	- - - - -	
PAK4_h	S R I T R V Q L Q P M K T V V R G S A M P V D G Y I S G L L N D I Q K L S V I S S N T L R G R S P T S R R A Q S L G L	116
PAK1_h	- - - - -	
PAK65_h	- - - - -	
PAK3_m	- - - - -	
PAK4_h	L G D E H W A T D P D M Y L Q S P Q S E R T D P H G L Y L S C N G G T P A G H K Q M P W P E P Q S P R V L P N G L A A K	176

PAK1_h	- - - - -	
PAK65_h	- - - - -	
PAK3_m	- - - - -	
PAK4_h	A Q S L G P A E F Q G A S Q R C L Q L G A C L Q S S P P G A S P P T G T N R H G M K A A K H G S E A R P Q S C L V G S	236
PAK1_h	- - - - -	
PAK65_h	- - - - -	
PAK3_m	- - - - -	
PAK4_h	[E Q K K N P Q A V L D V] 127	
PAK65_h	[E Q K K N P Q A V L D V] 108	
PAK3_m	[E Q K K N P Q A V L D V] 122	

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PAK1_h	[L][E][F][Y][N][S][K][K][T][S][N][S][Q][K][Y][M][S][F][T]	--DKSADEDYNSSNALNVKAV[SET][PAV][PPV][SE][D][ED][DD][DD][DA][T]	185	
PAK65_h	[L][K][F][Y][D][S]	--NTVK[Q][K][Y][L][S][F][T]	-PPEKDGFPSGTPALNAKGTEA[PAV][V][T][--][E][E][D][D][E][T]	160
PAK3_m	[L][K][F][Y][D][S]	[E][T][V][N][N][Q][K][Y][M][S][F][T]	[S][GD][KS][A][H][G][Y][I][A][H][Q][S][N][T][K][T][G][S][E][P]	182
PAK4_h	[A][T][G][R][P][G][G][E][G][S][P][S][P][K][T]	[T][R][E][S][S][L][K][R][R][L][F][R][S][M][F][L][S][T][A][T][A][P][P][S][S][K]	PNS[S][F][R][P][P][Q][K]	296
PAK5_h				ASGAK[LAAGRPENT]

PAK1_h	- - - - -	P P P V I A P R P E H T K S V Y T R S V I E P L P V T P T R D V A T S P I S P T E N N T T P P D A L T L N T E K	241
PAK65_h	- - - - -	A P P V I A P R P D H T K S I Y T R S V I D P V P A P V G D S H V D G A A K S L - - - - -	202
PAK3_m	D D N E P P P V I A P R P E H T K S I Y T R S V I E P L P V T P T R D V A T S P I S P T E N N T T P P D A L T L N T E K	- - - - -	239
PAK4_h	D N P P S L V A K A Q S L P S D Q P V G I F S P L T T S D T S S P Q K S L R T A P A T G Q L P G R S S P A - - - - -	- - - - -	353
PAK5_h	Y P R A D T D H P S R G A Q G E P H D V A P N G P S A G G L A I P Q S S S S S S S R P P T R A R G A P S P G V I L G P H A S 74	- - - - -	

PAK1_h	G Q G A S G T V Y T A M D V A T	G Q E V A I K Q M N L Q Q P K K E L I N E I L V M R E N K N P N I V N Y [D S Y L V	336
PAK65_h	G Q G A S G T V F T A T D V A L	G Q E V A I K Q I N L Q K Q P K K E L I N E I L V M K E L K N P N I V N F L D S Y L V	297
PAK3_m	G Q G A S G T V Y T A L D I A T	G Q E V A I K Q M N L Q Q P K K E L I N E I L V M R E N K N P N I V N Y [D S Y L V	334
PAK4_h	G E G S T G I V C L A R E K H S	G R Q V A Y K M M D L R K Q Q R R E L L F N E V V I M R D Y Q H F N [V E M Y K S Y L V	473
PAK5_h	G E G S T G I V C I A T V R S S G K L V A V K K M D L R K Q Q R R E L L F N E V V I M R D Y Q H E N [V E M Y N S Y L V	194	

PAK1_h [G D E L W V V M E Y L A G G S L T D V V T E T C M D E G Q I A A V C R E C L Q A L E S L H S N Q V I H R D I K S D N I L 396
PAK65_h [G D E L F V V M E Y L A G R S L T D V V T E T C M D E A Q I A A V C R E C L Q A L E F L H A N Q V I H R D I K S D N I L 357
PAK3_m [G D E L W V V M E Y L A G G S L T D V V T E T C M D V G Q I A A V C R E C L Q A L D F L H S N Q V I H R D I K S D N I L 394
PAK4_h [G E E L W V L M E F L Q G G A L T D I V S Q V R L N E E Q I A T V C E A V L Q A L Y L H A Q G V I H R D I K S D S I L 533
PAK5_h [G D E L W V V M E F L E G G A L T D I V T H T R M N E E Q I A A V C L A V L Q A L S V L H A Q G V I H R D I K S D S I L 254

PAK1_h [L G M D G S V K L T D F G F C A Q I T P E Q S K R S T M V G T P Y W M A P E V V T R K A Y G P K V D I W S L G I M A I E 456
PAK65_h [L G M E G S V K L T D F G F C A Q I T P E Q S K R S T M V G T P Y W M A P E V V T R K A Y G P K V D I W S L G I M A I E 417
PAK3_m [L G M D G S V K L T D F G F C A Q I T P E Q S K R S T M V G T P Y W M A P E V V T R K A Y G P K V D I W S L G I M A I E 454
PAK4_h [L T L D G R V K L S D F G F C A Q I S K D V P K R K S L V G T P Y W M A P E V I S R S I Y A T E V D I W S L G I M V I E 593
PAK5_h [L T H D G R V K L S D F G F C A Q V S K E V P R R K S L V G T P Y W M A P E L I S R L P Y G P E V D I W S L G I M V I E 314

PAK1_h [M I E G E P P Y L N E N P I R A L Y L I A T N G T P E L Q N P E K L S A I F R D F L N R C L E M D V E K R G S A K E L L 516
PAK65_h [M V E G E P P Y L N E N P I R A L Y L I A T N G T P E L Q N P E K L S P I F R D F L N R C L E M D V E K R G S A K E L L 477
PAK3_m [M V E G E P P Y L N E N P I R A L Y L I A T N G T P E L Q N P E K L S A V F H D F L N R C L E M D V D R R G S A K E L L 514
PAK4_h [M V D G E P P Y F S D S P V Q A M K R L R D S P P P K L K N S H K V S P V L R D P Q E R A T A Q E L L 653
PAK5_h [M V D G E P P Y F N E P P L K A M K M I R D N L P P R L K N L H K V S P S L K G F L D R L L V R D P A Q R A T A E L L 374

PAK1_h [Q H Q F L K I A K P L S S L T P L I A A K E A T K N N H
PAK65_h [Q H P F L K I A K P L S S L T P L I M A A K E A M K S N R
PAK3_m [Q H P F L K I A K P L S S L T P L I I A A K E A I K N S S R
PAK4_h [D H P F L L Q T G L P E C L V P L I Q L Y R K Q T S T C
PAK5_h [K H P F L A K A G P P A S I V P L I M R Q N R T R

SEQ ID NO: 5 STLK2 human Nterm=1-21 kin=22-274
Cterm=275-416

MAHSPVAVQVPGMQNNIADPEELFTKLERIGKGSFGEVFKGIDNRTQQVVAIKIIDLEEA
EDEIEIDIQQEITVLSQCDSSYVTKYYGSYLGSKLWIIMEYLGGGSALDLLRAGPFDEFQ
IATMLKEILKGLDYLHSEKKIHRDIKAANVLLSEQGDVKLADFGVAGQLTDQIKRNTFV
GTPFWMAPEVIQQSAYDSKADIWSLGITAIELAKGEPPNSDMHPMRVLFLIPKNNPPTLV
GDFTKSFKEFIDACLNKDPFRPTAKELLKHKFIVKNSKKTSYLTELIDRFKRWKAEGHS
DDESDSEGSDSESTSRENNTHPEWSFTTVRKKDPKKVQNGAEQDLVQTLSCLSMIITPA
FAELKQQDENNAASRNQAIEELEKSIAVAEEACPGITDKMVKKLIEKFQKCSADESP

SEQ ID NO: 6 STLK3 human Nterm=1-31 kin=32-308 Cterm=309-489
(insert=327-352) tail=490-516

TAAPAPAAPAAPAPAPAPAPAAQAVGWPICRDAYELQEVIKGATAVVQAALCKPRQERV
AIKRINLEKCQTSMDELLKEIQAMSQCSPNVVTYYTSFVVKDELWLVMKLLSGGSMLDI
IKYIVNRGEHKNGVLEEAIATILKEVLEGIDYLHRNGQIHRDLKAGNILLGEDGSVQIA
DFGVSALATGGDVTRNKRKTFVGTPCWMAPEVMEQVRGYDFKADMWSFGITAIELATG
AAPYHKYPPMKVLMLTLQNDPPTLETGVEDKEMMKYKGSKFRKLLSLCLQKDPSKRPTAA
ELLKCKFFQKAKNREYLIKEKLLTRTPDIAQRACKVRRVPGSSGHLHKTEDGDWEWSDEM
DEKSEEGKAAFSQEKSRRVKEENPEIAVSASTIPEQIQLSVHDSQGPPNANEDYREASS
CAVNVLRLRNSRKELENDIRFEFTPGRDTADGVSQELFSAGLVDGHVVIVAAANLQKIVD
DPKALKTLTFKLASGCDGSEIPDEVKLIGFAQLSVS

SEQ ID NO: 7 STLK4 human Nterm=absent, kin=1-178, Ctail=179-414,
insert1=198-222, insert2=253-293

KSGVLDXSTIATILREVLEGLEYLHKXGQIHRDVKAGNILXGEDGSVQIADFGVSAFLAT
GGDITRNKRKTFVGTPCWMAPEVMEQVRGYDFKADIWSFGITAIELATGAAPYHKYPPM
KVLMLTLQNDPPSLETGVQDKEMLKYGSKFRKMISLCLQKDPEKRPTAAELLRHKKFFQK
AKNKEFLQEKTQRAPTISERAKVRRVPGSSGRLHKTEDGGWEWSDEFDEESEEGKAA
ISQLRSPRVKESISNSELFPTTDVGTLQQVPEQISAHLPQAGQIATQPTQVSLPPTAE
PAKTAQALSSGSGSQETKIPISLVLRLRNSKKELENDIRFEFTPGRDTAEGVSQELISAGL
VDGRDLVIVAANLQKIVEEPQSNRSVTKLASGVEGSDIPDDGKLIGFAQLSIS

SEQ ID NO: 8 STLK5 human Nterm=absent, kin=1-222(lacks N-term),
Ctail=224-274

LICTHFMDGMNELAIAYILQGVLKALDYIHHMGYVHRSVKASHILISVDGKVYLSGLRSN
LSMISHGQRQRVVHDFPKYSVKVLPWLSPEVLQQNLQGYDAKSDIYSVGITACELANGHV
PFKDMPATQMLLEKLNGTVPCLLDTSTIPAEELTMSPSRVANSGLSDSLTTSTPRPSNG
DSPSHPYHRTFSPHFHHFVEQCLQRNPDARPSASTLLNHSFFKQIKRRASEALPELLRPV

Fig. 8A
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Inventor(s): Gregory PLOWMAN
et al.
Attorney Docket No.: 034536-0688

TPITNFEGSQSQDHSGIFGLVTNLEELLEVDDWEF

SEQ ID NO: 13 ZC1 human 1/5/98 Nterm=1-22 kin=23-289
coiled-coil=290-526 pro=527-640 B=641-896 Rab/Rac-BD=897-1239
MANDSPAKSLVDIDLSSLRDPAGIFELVEVVGNGTYGQVYKGRHVKTGQLAAIKVMDVTE
DEEEEIKLEINMLKKYSHHRNIATYYGAFIKKSPPGHDDQLWLVMFECGAGSITDLVKNT
KGNTLKEDWIAYISREILRGLAHLHIHHVIHRDIKGQNVLLTENAEVKLVDFGVSAQLDR
TVGRRNTFIGTPYWMAPEVIACDENPDATYDYSRSDLWSCGITAIEMAEAGAPPLCDMHPMR
ALFLIPRNPPPRLKSKKWKKFFSIEGCLVKNYMQRPSTEQLLKHPFIRDQPNERQVRI
QLKDHDIDRTKRGKEKDETLEYSGSEEEEVPEQEGERPSSIVNVPGESTLRRDFLRLQ
QENKERSEALRRQQLLQEQQLREQEEYKRQLLAERQKRIEQQKEQRRRLEEQQRRREREAR
RQQEREQRRREQEEKRRLEELERRKEEEERRRAEEKRRVEREQEYIRRQLEEEQRHLE
VLQQQQLLQEQQAMLLECRWREMEMEEHRQAERLQRQLQQEQQYLLSLQHDHRRPHPQHSQQPP
PPQQERSKPSFHAPEPKAHYEPADRAAREVEDRFRKTNHSSPEAQSKQTGRVLEPPVPSRS
ESFSNGNSESVHPALQRPAEPQVPVRTTSRSPVLSRRDPLQGSGQQNSQAGQRNSTSIE
PRLLWERVEKLVPRPGSGSSSGSSNSGSQPGSHPGSQSGSGERFRVRSSSKSEGSPSQRL
ENAVKKPEDKKEVFRPLKPADLTALAKELRAVEDVRPPHKVTDYSSSEESGTDEEDDD
VEQEGADESTSGPEDTRAASSLNLSNGETESVKTMIHDDVESEPAMTPSKETLIVRRT
QSASSTLQKHKSSEFTPFIDPRLLQISPSSGTTVTSVVGFCGMRPEAIRQDPTRKGS
VVNVNPTNTRPQSDTPEIRKYKKRFNSEILCAALWGVNLLVGTESGLMLDRSGQGVYP
LINRRRFQQMDVLEGNLVLTISGKKDKLRYYLWLRNKILHNDPEVEKKQGWTTVGDL
EGCVHYKVVVKYERIKFLVIALKSSVEVYAWAPKPYHKFMAFKSFGEVHKPLLVDLTVEE
GQRLKVIYGSCAGFHADVDGSVYDIYLPTHIQCSIKPHAIILPNTDGMELLVCYEDE
GVYVNTYGRITKDVVLQWGEMPTSVAIIRSNQTMGWGEKAIEIRSVETGHLGVFMHKRA
QRLKFLCERNDKVFFASVRSGGSSQVYFMTLGRTSLLSW

SEQ ID NO: 14 ZC2 human Nterm=missing kin=1-255 coiled-coil=256-442
pro=443-626 B=627-954 Rab/RacBD=955-1297
AFGEVYEGRHVKTGQLAAIKVMDVTGDEEEEIKQEINMLKKYSHHRNIATYYGAFIKKNP
PGMDDQLWLVMFECGAGSVTDLIKNTKGNTLKEEWIAYICREILRGLSHLHQHKVIHRDI
KGQNVLLTENAEVKLVDFGVSAQLDRTVGRNTFIGTPYWMAPEVIACDENPDATYDFKS
DLWSLGITAIEMAEAGAPPLCDMHPMRALFLIPRNPAKSLKSKWKKFQSFIESCLVKNH
SQRPATEQLMKHPFIRDQPNERQVRIQLKDHDRTKKRGKEKDETLEYSGSEEEEND
SGEPSSILNLPRESTLRRDFLRLQLANKERSEALRRQQLEQQQRENEEHKRQLLAERQKR
IEEQKEQRRRLEEQQRREKELRKQQEREQRRHYEEQMRREEERRRAEHEQYKRKQLEEQ
RQAERLQRQLKQERDYLVSLQHQRQEQRPVEKKPLYHYKEGMSPSEKPAWAKEVEERSRL
NRQSSPAMPHKVNANRISDPNLPPRSESFSISGVQPARTPPMLRPVDPQIPHLVAVKSQGP
ALTASQSVHEQPTKGLSGFQEALNVTSHRVEMPRQNSDPTSENPLPTRIEKFDRSSWLR

Fig. 8B
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QEEDIPPKVPQRTTSISPALARNSPGNGSALGPRLGSQPIRASNPDLLRTEPILESPLQ
RTSSGSSSSSTPSSQPGSQAGSSERTRVRANSKSEGSPVLPHEPAVKPEE
SRDITRPSRPASYKKAIDEDLTALAKELRELRIEETNRPMKKVTDYSSSESESSEEEE
EDGESETHDGTAVSDIPRLIPTGAPGSNEQYNVGMVGTHGLETSHADSFGSISREGTL
MIRETSGEKKRSGHSDSNGFAGHINLPDLVQQSHSPAGTPTEGLGRVSTHSQEMDSGTEY
GMGSSTKASFTPVDPRVYQTSPTEDEDEEDEESSAAFTGELLRQEQAQLNEARKISVV
NVNPTNIRPHSDTPEIRKYKKRFNSEILCAALWGVNLLVGTEGLMLLDRSGQGKVNLI
NRRRFQQMDVLEGLNVLTISGKKNKLRVYYLSWLRNRLHNDPEVEKKQGWITVGDEG
CIHYKVVKYERIKFLVIALKNAVEIYAWAPKPYHKFMAFKSFADLQHKPLLVDLTVEEGQ
RLKVIIFGSHTGFHVIDVDSGNSYDIYTPSHIQGNITPHAIIVILPKTDGMEMLVCYEDEGV
YVNTYGRITKDVVLQWGEMPTSVAIHSNQIMGWGEKAIEIRSVETGHLDGVFMHKRAQR
LKFLCERNDKVFFASVRSGGSSQVFMTLNRSMMNW

SEQ ID NO: 15 ZC3 human kin=1-255 coiled-coil=256-476 pro=477-680
B=681-983 Rab/RacBD =984-1326

AFGEVYEGRHVKTGQLAAIKVMDVTEDEEEEIKQEINMLKKYSHHRNIATYYGAFIKKSP
PGNDDQLWLVMFCGAGSVTDLVKNTKGNALKECIAYICREILRGLAHLHAHKVIHRDI
KGQNVLLTENAEVKLVDFGVSACQLDRTVGRRTFIGTPYWMAPEVIACDENPDATYDYS
DIWSLGITAIEMAEGAPPLCDMHPMRALFLIPRNPPRKLSSKKWSKKFIDFIDTCLIKTY
LSRPPTEQLLKFPFIRDQPTERQVRIQLKDHDIDRSRKKRGEKEETEYEYSGSEEEDDSHG
EEGEPSIMNVPGESTLRREFRLQKENKSNSEALKQQQLQQQQQRDPEAHIKHLLHQR
QRRIEEQKEERRRVEQQRREREQRKLQEKEQQRRLEDMQALRREEERRQAEREQEYIRH
RLEEEQRQLEILQQQLLQEQALLLEYKRKQLEEQRQSERLQRQLQQEHAYLKSLQQQQQ
QQLQKQQQQQLLPGDRKPLYHYGRGMNPADKPAWAREVEERTRMNKQQNSPLAKSKPGST
GPEPPIPQASPGPPGPLSQTPPMQRPVEPQEGPHKSLVAHRVPLKPYAAPVPRSQSLQDQ
PTRNLAAFPASHDPDPAIPAPTATPSARGAVIRQNSDPTSEGPGPSNPPAWVRPDNEAP
PKVPQRTSSIATALNTSGAGGSRPAQAVRARPRSNSAWQIYLQRRAERGTPKPPGPPAQP
PGPPNASSNPDLRRSDPGWERSDSVLPASHGHPQAGSLERNRVGVSSKPDSVPVSPGN
KAKPDDHRSRPGRPADFVLLKERTLDEAPRPPKKAMDYSSSEEVESSEDDEEEGEGGPA
EGSRDTPGGRDGDTDSVSTMVHDVEEITGTQPPYGGGTMVVQRTPEEERNLLHADSNGY
TNLPDVVQPSHSPTENSKGQSPPSKDGSGDYQSRLVKAPGKSSFTMFVDLGIYQPGGSG
DSIPITALVGGEGLRDQLQYDVRKGSVNVNPTNTRAHSETPEIRKYKKRFNSEILCAA
LWGVNLLVGTEGLMLLDRSGQGKVYGLIGRRRFQQMDVLEGLNLLITISGKRNLRVYY
LSWLRNKLHNDPEVEKKQGWTTVGDMEGCGHYRVVKYERIKFLVIALKSSVEVYAWAPK
PYHKFMAFKSFADLPHRPLLVDLTVEEGQRLKVIYGSAGFHAVDVGNSYDIYIPVHI
QSQITPHAIIFLPNTDGMEMLLCYEDEGVYVNTYGRRIKDVVLQWGEMPTSVAIICSNQI
MGWGEKAIEIRSVETGHLDGVFMHKRAQLKFLCERNDKVFFASVRSGGSSQVYFMTLNR
NRIMNW

Fig. 8C
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SEQ ID NO: 16 ZC4 human Nterm kin coiled-coil pro B=missing
Rab/RacBD=1-349

NVNPLYVSPACKPLIHMYEKEFTSEICCGSLWGVNLLGTRSNLYLMDRSGKADITKLI
RRRPFRQIQVLEPLNLLITISGHKNRLRVYHTLWRNKILNNPESKRRQEEMLKTEEAC
KAIDKLTGCEHFSVLQHEETTYIAIAALKSSIHLYAWAPKSFDESTAIKVFP TL DHKPVTV
DLAIGSEKRLKIFFSSADGYHLIDA ESEVMSDVTLPKNPLEIIIIPQNIIILPDCLGIGMM
LTFNAEALSVEANEQLFKKILEMWKDIPSSIAFECTQRTTGWGQKAIEVRSLQSRVLESE
LKRRSIKKLRFLTRGDKLFFTSTLRNHHSRVYFMTLGKLEELQSNYDV

SEQ ID NO: 18 KHS2 human Nterm=1-13 kin=14-273 A=274-346
Pro=347-534 RabBD =535-894

MNPGFDLSRRNPQEDFELIQRIGSGTYGDVYKARNVNTGELAAIKVIKLEPGEDFAVVQQ
EIIMMKDCKHPNIVAYFGSYLRRDKLWICMEFCGGGSLQDIYHVTGPLSELQIAVVSRET
LQGLYYLHSKGKMHRIKGANILLTDNGHVVKLADFGVSAQITATIAKRKSFIGTPYWMAP
EVAVERKGGYNQLCDLWAVGITAIELAELQPPMFDLHPMRALFLMTKSNFQPPKLKDKM
KWSNSFHHFVKMALTKNPKKRPTAEKLLQHPFVTQHLTRSLAIELLKDVKNNPDHSTYHDF
DDDDPEPLVAVPHRIHSTS RNVREEKTRSEITFGQVKFDPPLRKETEPHHELPDSGFLD
SSEEIYYTARSNLDLQLEYGQGHQGGYFLGANKSLLKSVEEELHQRGHVAHLEDDEGDDD
ESKHSTLAKAKIPPLPPKPKSIFIPQEMHSTEDENQGTIKRCPMMSGSPA KPSQVPPRPPP
PRLPPHKPVALGNGMSSFQLNGERDGLCQQQNEHRGTNLSRKEKKDVPKPI SNGLPPPT
KVMGACFSKVNGCPLKIHCASSWINPDTRDQYLIFGAEGIYTLNLNEHETSMEQLF
PRRCTWLYVMNNCLLSISGKASQLYSHNLPGLFDYARQMQLPVAIPAHKLDRILPRKF
SVSAKIPETKWCQKCCVVRNPYTGKYLCGALQTSIVLLEWVEPMQKFMLIKHIDFPIPC
PLRMFEMLVVPEQEYPLVCVGVSRGDFNQVRFETVNPNSTSSWFTESDTPQTNVTHVT
QLERDTILVCLDCCIKIVNLQGRLKSSRKLSSELTDFQIESIVCLQDSVLAFWKHGMQG
RSFRSNEVTQEISDSTRIFRLLGSDRVVVL ESRPTDNPTANSNLYILAGHENSY

SEQ ID NO: 22 SULU1 human N=1-21 kin=22-277 A=278-427
coiled-coil1=428-637 B=638-751 coiled-coil2=752-898

MRKGVLKDPEIDDLFYKDDPEELFIGLHEIGHGSFGAVYFATNAHTNEVVAIKKMSYS GK
QTHEKWQDILKEVKFLRQLKHPNTIEYKGCYLKEHTAWLVMEYCLGSASDLLEVHKKPLQ
EVEIAITHGALHGLAYLHSHALIHRDIKAGNILLTEPGQVKLADFGSASMASPANSFVG
TPYWMAPEVILAMDEGQYDGKVDIWSLGITCIELAERKPPLFNMNAMSALYHIAQND SPT
LQSNEWTDSFRRFVDYCLQKIPQERPTSAELLRHDFVRRDRPLRVLIDL IQRTKDAVREL
DNLQYRKMKKILFQETRNGPLNESQEDEEDSEHGTSLNREMDSLGSNHSIPSMSVSTGSQ
SSSVNSMQEVMDSSSELVMMHDDESTINSSSVHKDHVFTRDEAGHGDPRPEPRPTQ
SVSQSALHYRNRRERFATIKSASLVTRQIHEHEQENELREQMSGYKRMRRQHQKQLIALEN
KLKAEMDEHRLKLQKEVETHANNSSIELEKLAKKQVAIEKEAKVAAADEKKFQQQILAQ

Fig. 8D
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QKKDLTTFLESQKKQYKICKEKIKEEMNEDHSTPKKEKQERISKHENLQHTQAEEE AHL
LTQQLRYDKNCRFFKRKIMIKRHEVEQQNIREELNKKRTQKEMEHAMLIRHDESTRELE
YRQLHTLQKLRLMDLIRLQHQTELENQLEYNKRRERELHRKHVMGLRQPKNLKAMEMQIK
KQFQDTCKVQTKQYKALKNHQLEVTPKNEHKTLKDEQTRKLAILAEQYEQSINEMM
ASQALRLDEAQEAECQALRLQLQQEMELLNAYQSKIKMQTAEQHERELQKLEQRVSLRRA
HLEQKIEEEELAALQKERSERIKNLLERQEREIETFDMESLRMGFGNLVTLDFPKEDYR

SEQ ID NO: 23 SULU3 human Nterm=missing kin partial=1-66 A=67-215
coiled-coil1=216-425 B=426-539 coiled-coil2=540-786 Ctail=687-786
IELAERKPPLFNMNAMSALYHIAQNESPTLQSNEWSDYFRNFVDSCLQKIPQDRPTSEEL
LKHIFVLRERPETVLIDLIQRTKDAVRELDNLQYRKMKKLLFQEAHNGPAVEAQEEEEEQ
DHGVGRTGTVNSVGSNQSIPSMSISASSQSSSVNSLPDVSDDKSELDMMEGDHTVMSNSS
VIHLKPEEENYREEGDPRTRASDPQSPPQVSRHKSHYRNREHFATIRTASLVTRQMQEHE
QDSELREQMSGYKRMRRQHQKQLMTLENKLKAEDEHRLRLDKDLETQRNNFAAEMEKLI
KKHQAAMEKEAKVMSNEEKKFQQHQIQAQQKKEELNSFLESQKREYKLRKEQLKEELNENQS
TPKKEKQEWLSKQKENIQHFQAEAEANLLRRQRQYLELECRRFKRRMLLGRHNLEQDLVR
EELNKRQTQKDLEHAMLLRQHESMQUELEFRHLNTIQKMRCELIRLQHQTELTNQLEYNKR
RERELRRKHVMEVRQQPKSLKSKELQIKKQFQDTCKIQTQYKALRNHLETTPKSEHKA
VLKRLKEEQTTRKLAILAEQYDHSINEMLSTQALRLDEAQEAECQVLKMQLQQELELLNAY
QSKIKMQAEAQHDRELRELEQRVSLRALLEQKIEEEMLALQNERTERIRSLLERQAREI
EAFDSESMRLGFSNMVLSNLSPPEAFSHSYPGASGWSHNPTGGPGPHGHPMGGPPQAWGH
PMQGGPQPWGHPSGPMQGVPRGSSMGVRNSPQALRRTASGGRTEQGMSRSTSQTQISNG
SHMSYT

SEQ ID NO: 24 SULU3 murine Nterm=1-25 kin=26-273 A=274-422
cc1=423-632 B=633-748 cc2=missing
MPSTNRAGSLKDPEIAELFFKEDPEKLFTDLREIGHGSFGAVYFARDVRTNEVVAIKKMS
YSGKQSTEKWQDIKEVKFLQRIKHPNSIEYKGCYLREHTAWLVMYECLGSASDLLEVHK
KPLQEVEIAITHGALQGLAYLHSHTMIHRDIKAGNILLTEPGQVKLADFGSASMASPAN
SFVGTYPWMAPEVILAMDEGQYDGKVDVWSLGITCIELAERKPPLFNMNAMSALYHIAQN
ESPTLQSNNMDSCLQKIPQDRPTSEELLKHMVLRERPETVLIDLIQRTKDAVRELDNLQ
YRKMKKLLFQEAHNGPAVEAQEEEEEQDHGVGRTGTVNSVGSNQSIPSMSISASSQSSV
NSLPDASDDKSELDMMEGDHTVMSNSSVIHLKPEEENYQEEGDPRTRASDPQSPPQVSRH
KSHYRNREHFATIRTASLVTRQMQEHEQDSELREQMSGYKRMRRQHQKQLMTLENKLKAE
MDEHRLRLDKDLETQRNNFAAEMEKLIKHQAAAMEKEAKVMANEEKKFQQHQIQAQQKKE
NSFLESQKREYKLRKEQLKEELNENQSTPKKEKQEWLSKQKENIQHFQAEAEANLLRRQR
QYLELECRRFKRRMLLGRHNLEQDLVREELNKRQTQKDLEHAMLLRQHESMQUELEFRHLN
TIQKMRCELIRLQHQTELTNQLEYNKRERELRRKHVMEVRQQPKSLKSKELQIKKQFQD

Fig. 8E
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Title: PAK5 SCREENING
METHODS
Inventor(s): Gregory PLOWMAN
et al.
Attorney Docket No.: 034536-0688

TCKIQTRQYKALRNHLLETPKNEHKAI

SEQ ID NO: 26 GEK2 human N=1-33 kin=34-294 A=295-337 B=338-472 215
coiled-coil1=473-724 215 coiled-coil2=725-912

MAFANFRRILRLSTFEKRKSREYEHVRDLDPEVWEIVGELGDGAFGKVKAKNKGTA
LAAAKVIETKSEEELEDYIVEIEILATCDHPYIVKLLGAYYHDGKLWIMIEFCPGGAVDA
IMLELDRGLTEPQIQVVCRQMLEALNFLHSKRIIHRDLKAGNVLMTLEGDIRLADFGVSA
KNLKTQKRDSFIGTPYWMAPEVVMCETMKDTPYDYKADIWSLGITLIEMAQIEPPHEL
NPMRVLLKIAKSDPPTLLTPSKWSVEFRDFLKIALDKNPETRPSAAQLLEHPFVSSITSN
KALRELVAEAKAEVMEIEEDGRDEGEEDAVDAASTLENHTQNSSEVSPPSLNADKPLEE
SPSTPLAPSQSQDSVNEPCSQPSGDRSLQTTSPVVAPGNENGLAVPVPLRKS RPSMDA
RIQVAQEKAQVAEQGGDLSPAANRSQKASQSRPNSSALETLGGEKLANGSLEPPAQAAPGP
SKRDSDCSSLCTSESMYGTNLSTDLSLNKEMGSLSIKDPKLYKKTLCRTRKFVVDGVEV
SITTSKIISEDEKKDEEMRFLRRQELRELRLQKEEHRNQTQLSNKHELQLEQMHKRFEQ
EINAKKKFFDTELENLERQQKQQVEKMEQDHAVRRREEARRIRLEQDRDYTRFQEQLKLM
KKEVKNEVEKLPRQQRKESMKQKMEHTQKKQLLDRDFVAKQKEDLELAMKRLTTDNRRE
ICDKERECLMKKQELLRDREAALWEMEEHQLQERHQLVKQQLKDQYFLQRHELLRKHEKE
REQMQRYNQRMIEQLKVRQQKEKARLPKIQSEGKTRMAMYKKSLHINGGSAAEQREKI
KQFSQQEEKRQKSERLQQQQKHENQMRDMLAQCESNMSELQQLQNEKCHLLVEHETQKLK
ALDESHNQNLKE

SEQ ID NO: 29 PAK4 human Rac=1-51 A=52-224 Nterm=225-393

kin=394-658 Ctail=659-681 residues 13-23

(SAPQNFQHRVH)= Cdc42 /Rac-binding motif

MFRKKKKRPEISAPQNFQHRVHTSFDPKEGKFVGLPPQWQNILDTLRRPKPVVDPSRIT
RVQLQPMKTVVRGSAMPVDGYISGLLNDIQKLSVISSNTLGRSPTSRRAQSLGLLGDE
HWATDPDMYLQSPQSERTDPHGLYLSNGTPAGHKQMPWEPQSPRVLPNGLAAKAQSL
GPAEFQGASQRCLQLGACLQSSPPGASPPGTGNRGMKAAKHGSEEARPQSCLVGSATGR
PGGEGPSPKTRESSLKRRLFRSMFLSTAATAPPSSSKPGPPPQSKPNSSFRPPQKDNP
SLVAKAQSLPSDQPVGTFSPLTTSDTSSPQKSLRTAPATGQLPGRSSPAGSPRTWHAQIS
TSNLYLPQDPTVAKGALAGEDTGVVTHEQFKAALRMVVDQGDPRLLLDSYVKIGEGSTGI
VCLAREKHSRQVAVKMDLRKQQRELLFNEVVIMRDYQHFNVVEMYKSYLVGEELWVL
MEFLQGGALTDIVSQVRLNEEQIATVCEAVLQALAYLHAQGVIHRDIKSDSILLTLDGRV
KLSDFGFCAQISKDVPKRKSLVGTPYWMAPEVISRLYATEVDIWSLGINVIEMVDGEPP
YFSDSPVQAMKRLRDSPPPKLKN SHKVSPVLRDFLERMLVRDPQERATAQELLDHPFLLQ
TGLPECLVPLIQLYRKQTSTC

Title: PAK5 SCREENING
METHODS

Inventor(s): Gregory PLOWMAN
et al.

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Fig. 8F
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SEQ ID NO: 30 PAK5 human Rac A=missing Nterm partial=1-114
kin=115-379 Ctail=380-398

ASGAKLAAGRPFNTYPRADTDHPSRGAQGEPHDVAPNGPSAGGLAIPQSSSSSRPPTRA
RGAPSPGVLGPHASEPQLAPPACTPAAPAVPGPPGPRSPQREPQRVSHEQFRAALQLVVD
PGDPRSYLDNFIFKIGEGSTGIVCIATVRSSGKLAVKKMDLRKQQRRELLFNEVVIMRDY
QHENVVEMYNNSYLVGDELWVVMEMFLEGGALTIDVTHTRMNEEQIAAVCLAVLQALSVLHA
QGVIHRDIKSDSLTHDGRVKLSDFGFCAQVSKEVPRRKSLVGTPYWMAPELISRLPYG
PEVDIWSLGIMVIEMVDGEPPYFNEPPLKAMKMIRDNLPPRLKNLHKVSPSLKGFLDRLL
VRDPAQRATAAELLKHPFLAKAGPPASIVPLMRQRNTR

Fig. 8G

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Title: PAK5 SCREENING
METHODS
Inventor(s): Gregory PLOWMAN
et al.
Attorney Docket No.: 034536-0688

SEQ ID NO: 1 STLK2 HUMAN

TAACAGCCCACCTCTAGCCCCGGCTACGCGCCGCCAGCCCAGTAACCCCACTTTGTG
TGTCTCCCAGGCCCCGATCGAAAAGCCTGGGAGGGCCGCCGAACCTACCCCGGAGGGAG
GAGCCAGTCCGAACCCAAGGC GCCACCGCCGCAGAAGCGGAGCGAGGCAGCATTGCCTC
CATGGCCCACTCGCCGGTGGCTGTCCAAGTGCCTGGGATGCAGAATAACATAGCTGATCC
AGAAGAACTGTTCACAAAATTAGAGCGCATTGGAAAGGCTCATTGGGAAGTTCAA
AGGAATTGATAACCGTACCCAGCAAGTCGTTGCTATTAAAATCATAGACCTTGAGGAAGC
CGAAGATGAAATAGAAGACATTAGCAAGAAATAACTGTCTTGAGTCATGTGACAGCTC
ATATGTAACAAAATACTATGGGTCATATTAAAGGGTCTAAATTATGGATAATAATGGA
ATACCTGGCGGTGGTCAGCACTGGATCTCTCGAGCTGGTCCATTGATGAGTTCCA
GATTGCTACCATGCTAAAGGAATTAAAGGTCTGGACTATCTGCATTAGAAAAGAA
AATTCAACCGAGACATAAAAGCTGCCAATGTCTTGCTCTCAGAACAGGAGATGTTAACT
TGCTGATTTGGAGTTGCTGGTCAGCTGACAGATAACAGATTAAAAGAAATACCTTG
GGGAACCTCCATTGGATGGCTCCTGAAGTTATTCAACAGTCAGCTTATGACTCAAAAGC
TGACATTGGTCATTGGAAATTACTGCTATTGAACTAGCCAAGGGAGAGCCACCTAAC
CGATATGCATCCAATGAGAGTTCTGTTCTTATTCCAAAAACAATCCTCCAACCTTGT
TGGAGACTTTACTAAGTCTTTAAGGAGTTATTGATGCTTGCCTGAACAAAGATCCATC
ATTCGTCCTACAGAAAAGAACCTCTGAAACACAAATTGATAATCAAAAGAA
GACTTCTTATCTGACTGAACAGTGAAGATCGTTTAAGAGATGGAAGGCAGAAGGACACAG
TGATGATGAATCTGATTCCGAGGGCTCTGATTGGAATCTACAGCAGGAAAACAATAC
TCATCCTGAATGGAGCTTACCAACCGTACGAAAGAACGCTGATCCAAGAAAGTACAGAA
TGGGGCAGAGCAAGATCTTGTGCAAACCCCTGAGTTGTTGTATGATAATCACACCTGC
ATTTGCTGAACCTAACAGCAGGACGAGATAACGCTAGCAGGAATCAGGCATTGAAGA
ACTCGAGAAAAGTATTGCTGTGGCTGAAGCCGCTGTCCCAGCATCACAGATAAAATGGT
GAAGAAAACAATTGAAAAATTCAAAAGTGTTCAGCAGACGAATCCCCCTAAGAAA
TTATTGGCTTCTGTTCATATGGACCCAGAGAGGCCCCACCAAAACCTACGTCAAGATTAA
AATGCTTAACCCATGAGCTCCATGTGCCTTGGATCTTGCAACACTGAAGATTGGAA
GAAGCTATTAAACTATTTGTGATGGCGTTATCATTGATAATTGAAAGGATTATTT
GTAAGGAATAACTTTAATACTATAGTTCACCTGTATTCTAGTAAATGTTGAGACACCG
TTTGCTTTAAGTATCCCTATTCTTAAGTTACGAGGATGAATACCTTCACATTG
TCTTAGTTGACTCTACAGTCATGAAACATACAGGTCTTCAAAGTCATTCTCAATATT
AGCTTTGTAATTCAAGCTTACAAAAGCTTTTAAAGGGGGGGGGGGGGGGGGGGGGGGGG
CTAAAAATGACTATTGGTGGGGAGGTGAAATAAGTCATACCTTCTTAAACAGAAAATT
TAAGTAAAGTCTTTAAATGAAACCTGTAAAAGTATTGACTCTTCTACCAAGTTGGTATG
ATATTCCAGGCAGCTCAATGATTATCACATTGAGACCCCTGTGTTGAAGCATTACAGG
CAATGTACAGCAACAGAGGTACCTCTGGTGTATAGTATTACATTCTTTAGGTAGA
AGAGGCAATTTCACCTTACATGGTTAGAAATTAAAGCAAGATCATTACCCAA

Fig. 9A

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Title: PAK5 SCREENING
METHODS

Inventor(s): Gregory PLOWMAN
et al.

Attorney Docket No.: 034536-0688

GGATAGGTGTTGGTAATGTTGAAGGGAGTTAGTCTGGCTTCATGTTTACATCTTCAACT
AAAATCCCATACTATCTGCTGGATTGGAGAGCCAAAAAATAAGCTGATTGTATGTG
ATTAATATCTGATCAACAGGTATGAATATAACTAACTTAAATCAGCATATTTGCCATGGTA
ATAAATTGTCTATAAACTATTTATATTTGTTCTTCATAATTATCACTAATAAGCA
TCAGTTGTTTTAAAAGGATATTAAGTGAGCATTTCAGTTCAATGAAAATAA
CCATAGTACAGGATGATTCTGTCCACACAAAGGTTAAATTAGATTGCACAGTTAATTT
CACTTATATTATGGTACTATTATGTGGGTGATGCCTTTCTTTAAGCCAGTACATA
TATTATGCCTGCTTAAGTCTGAACCTGGGCTGTATTCAAGTAGTTGAGAATTATTGAT
ATTTAGTTGATAGCTAATGTTAATTGTTGGATCTGCACAGTTGGTTTGACAA
AAGTCATTTAAAAAAATCTGAGTAATTGTCAAATATTAAAAGAAAGATATTCTCCTGTA
AGGAATACAGTTTAGTCAAAGTGGCCATTACATCCTCTTTAATTACATAATACAG
ATACTTGAGAAAGTTGTTGGTGTGATGCCAGAAAATTCTTTATTGGTGCTAT
ATTGTAACAATTATTAAATGCTATTGATTTGAAGTAACGGTTCAGTAAATTTCAC
CCTGCTGTGTAAC TGAAACACAATTACAGTTATAATCATCTGAGTCTGGAGATAA
TTTGCAACTCATGTTATGGTTAAATGAATATTGTAAAAGTAAAAGCAACAAATT
ATAAATTGATTATTGAAACCTTACAACACAATTGCATCCAAATACAAATTGTATTGCT
TATTCAATTAGCTATTGCTCTGTAATCTGTTCTAGGTGAAGCATACTCCAGTGT
AGGGTTTGAAAATAAATATTAAATTACAGTCAAAAAAAAAAAAAAAAAAAAA
AAAAAAAAAAAAAAAAAAAAAA

SEQ ID NO: 2 STLK3 HUMAN

GACAGCAGCGCCGGCCCCGGCAGCTCCCGCGGCCCGGCCCGGCCCGGCCCGGCC
GGCGGCACAGGCTGTCGGCTGGCCATCTGCAGGGACGCGTACGAGCTGCAGGAGGTTAT
CGCAGTGGAGCTACTGCTGTGGTCAGGCAGCCATGCAAACCCAGGCAAGAACGTGT
AGCAATAAAACGGATCAACTGGAAAAATGCCAGACAGTATGGATGAACTATTAAAAGA
AATTCAAGCCATGAGTCAGTGCAGCCATCCAACTGAGTGTACCTATTACACCTCTTTGT
GGTCAAAGATGAACTTGGCTGGTCAATGAAATTACTAAGTGGAGGTTCAATGTTGGATAT
CATAAAATACATTGTCACCGAGGAGAACACAAGAATGGAGTTCTGGAAGAGGCAATAAT
AGCAACAAATTCTAAAGAGGTTTGAAGGGTTAGACTATCTACACAGAAACGGTCAGAT
TCACAGGGATTGAAAGCTGTAATATTCTTCTGGTGAGGATGGTCAGTACAAATAGC
AGATTGGGTAAGTGCCTCTAGCAACAGGGGTGATGTTACCGAAATAAGTAAG
AAAAACATTGTTGGCACCCATGTTGGATGGCTCTGAAGTCATGGAACAGGTGAGGAG
CTATGACTTCAGGCTGACATGTGGAGTTGGAAATAACTGCCATTGAATTGCAACAGG
AGCAGCGCCTTATCACAATATCCTCCATGAAAGTGTAAATGTTGACTTGCACAAATGA
TCCACCCACTTGGAAACAGGGTAGAGGATAAAGAAATGATGAAAGTACGGCAAGTC
CTTAGAAAATTACTTCACTGTGTCTCAGAAAGATCCTCCAAAAGGCCACAGCAGC
AGAACTTTAAAATGCAAATTCTCCAGAAAGCCAAGAACAGAGAGTACCTGATTGAGAA
GCTGCTTACAAGAACCCAGACATAGCCAAAGAGCCAAGAGGTAAGAAGAGTTCTGG

Fig. 9B
34/76

Title: PAK5 SCREENING
METHODS

Inventor(s): Gregory PLOWMAN
et al.

Attorney Docket No.: 034536-0688

GTCAAGTGGTCACCTCATAAAACCGAAGACGGGACTGGGAGTGGAGTGACGACGAGAT
GGATGAGAAGAGCGAAGAAGGGAAAGCAGCTTTCTCAGGAAAAGTCACGAAGAGTAAA
AGAAGAAAATCCAGAGATTGCAGTGAGTGCCAGCACCATCCCCAACAAATACAGTCCCT
CTCTGTGCACGACTCTCAGGGCCCACCCAAATGCTAATGAAGACTACAGAGAAGCTTCTC
TTGTGCCGTGAACCTCGTTGAGATTAAGAAAATCCAGAAAGGAACCTTAATGACATACG
ATTTGAGTTTACTCCAGGAAGAGATAACAGCAGATGGTGTATCTCAGGAGCTCTCTGC
TGGCTTGGTGGATGGTCACGATGTAGTTAGTGGCTGCTAATTACAGAAGATTGTAGA
TGATCCCAAAGCTTAAAAACATTGACATTAAAGTGGCTTCTGGCTGTGATGGTCGGA
GATTCTGATGAAGTGAAGCTGATTGGGTTGCTAGTTGAGTGTAGCTGATGTATGTC
CCTTGATGTACCCCTGATCTGTATGCCACCGCCACCCCTACTCCCTCAACCCCTCCC
TCTTCTGCCATTCTCCCACCCCTCACTCCATTCTAGCAAAATCAGAAGATTG
TGAAGAGGCCGGCTCAACAAAATGGATAAAAAATAATTTTAAAACCTACAAACACT
CCGAGTTCTGCTTATTCTCTAGCAATCCACAGTACAAGAACAGCAAATGCCACAGCTG
CACGACTGTTGCTCATTTCACAAAGCTATTAAATTCTTAGCAATCAATTGGATAT
CCCTTAAGTGAAGAACATCTGAAATAACTCAGGTGGCTTATTATTGGCAACAAAAGG
AATTCTATCCAGAACGCTATTCTCCTTCATTGTTGTTATTCTGTTATAATACCTT
AATTGTACATCTGACAATACTGCCTTTATGTTGTTAGAAATTAAATATACTTATA
AAATTAAAGATTATTAGCCAAACTGAAATTCTAGTTAAAACACTGACTGTGAATTTATT
TTTCATATATTATGCATTACACACCTTAGCTATAAGAAAAAAAGGGTTTGTATTATG
CTTCTTGAGTTAATCTGTTATTAAACAAAAGTTTGGCTATCTTGGAGTATT
GTAACCTCTAAATTGAAATGACTGAATTAGGAATTGGATGCTTATTCTTAGTCTG
TTTGCTAAAAACCAATTACAATCTGACTGTCTTGGAGAGGGAGGTGCCTGCAA
CTTCACATTAAGAACATGTGCCTGAGGCTGCTTACTCTGAAATAGTCTAGATCTAAAT
TTCCTCTATATAAGGTGGCATATGTTAAGTTGCTCATTGGACCGTTAGAATGCTAT
GTAAAATGTTGCCATTCTGTTAGATTGCTAACTATAACCATCTCTGATTGGCTCTCC
TTAAGTGATAGGATTGTTATTCTAAAGGTGATAAAACTGAAAATATCAGAATCTGAGTT
TTACTTGAAATTGCAAGAACCCAGGTGGAGTGAAGGAAATTGGAGGGTTTGTGCAATG
ACTAAAAGTAAAACGCTGTTAAGGTTCAAGAACATACTTCAACCCAGTAGCCCTC
TGCTTGACTGTATATTATGAAACTAGTAAACCTTAGGATTGAAAATTGGAGTCTAATC
TTCAAGGAGGTGGCTCCAGGATGGTACCATGCTCTTCTAGCTAACCTAGATAT
GGCAGCTTTAATGACTTCAAAAGCAAATATATTACTAAGGAAAAAAAGTTATT
ATAATTGCTTGTATAATTGTTAAGGTGTTAGAGCCATTGCTACACAAATTAAATGTA
ATTTCATTCCATTCTATTGTTACACACGATTACTCGAAGATGACTGCAAAGGTAAAAG
GAAAATAAAAGTGTATTGCACAATGAAAAA

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CAAAAGTGGAGTCCTAGATGANTCTACCATGGCTACGATACTCCGAGAAGTACTGGAAGG
GCTGGAATATCTGCATAAAANTGGACAGATCCACAGAGATGTGAAAGCTGAAACATTCT

Fig. 9C
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Title: PAK5 SCREENING
METHODS

Inventor(s): Gregory PLOWMAN
et al.

Attorney Docket No.: 034536-0688

TNTTGGAGAAGATGGCTCAGTACAGACTTCAGACTTGGGGTTAGTGCTTTTAGCAAC
TGGTGGTGAATTACCCGAAATAAAGTGAGAAAGACCTTGTGGCACCCCTGTTGGAT
GGCACCTGAAGTTATGGAACAGGTCCGTGGTTATGATTCAAAGCTGATATTGGAGTT
TGGATTACAGCAATTGAATTGGCTACAGGGCGGCTCCTTATCATAAATATCCACCAAT
GAAGGTTTAATGCTGACACTGCAGAACGATCCTCCTTGGAAACTGGTGTCAAGA
TAAAGAAATGCTGAAAAAATATGGAAAATCATTAGAAAATGATTCAATTGTGCTTC
AAAAGATCCAGAAAAAGACCAACAGCAGCAGAACTATTAAGGCACAAATTTCAGAA
AGCAAAGAATAAAGAATTCTCAAGAAAAACATTGCAGAGAGCACCAACCATTCTGA
AAGAGCAAAAAAGGTTGGAGAGTACCAAGGTTCCAGTGGCGTCTCATAAGACAGAGGA
TGGAGGCTGGAGTGGAGTGTGATGAATTGATGAAGAAAGTGAGGAAGGGAAAGCAGC
AATTTCACAACTCAGGTCTCCCCGAGTGAAAGAATCAATATCAAATTCTGAGCTCTTCC
AACAACTGATCCTGTGGTACTTGTCCAAGTTCCAGAACAGATCTGCTCATCTACC
TCAGCCAGCTGGCAGATTGCTACACAGCAACTCAAGTCTCTCCACCCACCGCAGA
GCCAGCAAAACAGCTCAGGCTTGTCTCAGGATCAGGTTACAAGAAACCAAGATCCC
AATCAGTCTAGTACTAAGATTAAGGAATTCAAAAAAGAACTAAATGATATTGATTTGA
ATTTACTCCTGGGAGAGATAAGCAGAGGGGTCTCTCAGGAACCTATTGCTGGCCT
GGTCACGGAAGGGATTAGTAATAGTGGCAGCTAATTGAGAAAATTGTGGAAGAAC
TCAGTCAAATCGATCTGTCACTTCAAACCTGGCATCTGGTGTCAAGGCTCAGATATTCC
TGATGATGGTAAACTGATAGGATTGCCAGCTCAGCATCAGCTAAACCACAACCCTGGA
AGAGGCAGGCTAAGGAGATTCCACACATCGTATCTGTTGCTTCTATTGGCTAAACC
CACTACTGCCAAGAACCCAGCAACAAACCTCCGGCTAGGAGCTTAGAAGTCTTATG
TTCTTCCTGCCATCATTCTCTTCCCACAGGGAAAGAAAAGTTGGATCACTAGTGGC
CAGCATCCCCAGAGTCCGTAGTAAACTTACTCATATGTCCCTGTCTCCATCT
GAGAAGTGGCCATGTGCTTCAAGGCCAGGGAGATCTGTCAAGCTCATTGGCTT
ACTCCAATGATGGCCAGGTGGAAAAGTAGCAGCTGTATCAGCTTCTCATCCTGCTG
TTCCCCCACACCTGCCAGGATATGGACATCTGGGATATCTCTTACCACTGAAGTAGAA
TTGATTGTTAGCTGGAGCCAGAGAAATTAAATTATGTTTCTTGACCTGATGT
GAATTCTAGCAACCTTGTAGGAAAAAGCACAGCCTCAGATGGAGGCAGCTAAACTGT
GTTCTTGTGTTCTGGTCTAAGCTTCTGGCTAGCCTTAACCTCAGCTGGTCAAAACATC
TGACTGTAGCCGAACCTCAGCCATCAGATCCTCAAAGTGGAACTTGGATTGTTTAC
AGACAACATCGAGTAATGGCTGTAATGTGAATTGCTCAGAGGTGGTTTGAACAGG
AAAATCATAATTCATATCATTGGAGAAGTATTATTTCAAATATCAAATTGAAGAAAAA
CTCAATCCTCCATGAAAATCAGTTCGCTGGCTCCAAGTCGTGAGGAAATGGTATGC
AAGGCTGAGATTCTACAGCAATAAGGAGACACACACTGGGCCAGAGAGGCCCTGCTTC
TGCCTGCTCTCCTGCACTGACCCCTTGGAGGGGTCTGTGCTGAAGCTAACTCAAG
ATGGAAAGTGAAACCACATGTGCCGTGACCTTGGATTGAGTAACTGTTAAAAAGAGCA
TGATTTCAGAAATAATAAATTATTCTTGGTTAAAAAGAGCACTCATAATG

Fig. 9D
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Title: PAK5 SCREENING
METHODS
Inventor(s): Gregory PLOWMAN
et al.
Attorney Docket No.: 034536-0688

CAATATGTGAATAATCAGTGAGGTTGATTTCTTTCTACCGTTCATAGTCTTG
TCTAACTGCTAGTAACCTACCGAGTTATATGAGTGGGATACTCAATCTGGCCTTA
AAAAGATAACAAAGATGGCTGTGGTCCCTGGAAAGGGGAGAGTTGCCCTTACAGA
ATCACTCGAGCCCTTCCAGCACTGTTGGTCTGATGAACAAGGTTGTTACCTTAC
CTCTGGAACATATCTGAAAACCTTCCCACAAATAACTGTCACACCTTGTTCATT
CTGAGTCTTAGTTAGTCATGGCTTCACCTGCTCTAGGTGCAAAGGCATGTTG
GGAAAGAGATGGATGTTGGGAGGAAGAGAGGGAGATGGATTCAAGTGGGAGTTAGGAGG
AGAGTAGGTGAGATGATCAGACACCGGAGTTCAACGTCCCAGCAGTCTGGTAAAAGGAG
GGAGCCTGCTGAGCCAGGAGGGAGAAAAGAAGATTGACCAGCTGCTAGAAAAACTTA
GCTTTCTTTCTTTTGAGGGGGACGGAGAGGAACAAGGATGGGAGGTAGG
AATGAGGTATAGAAAAGAGATAGCATCTTCTTGGCACAAGACTAGTGGCTTACCGCTTA
CCTTAGAGTTGTTTTTCAAACCCATCAAATCTACTTATTATGAATCCAA
GGGGTGGCAGCATCACTCTGTTCTAGCATTCTTGAGATGGCTGGTGCCTAGCTGG
GAGTGAGCAGCAGCCATCCCTGTTCACTTCTCTAGCCCATCATTACCTGTGAAC
AGTGGGGCAGTCATGGCAAATAGAATTGGCTGGGTTCTCCTTCTTCAAGTCATTG
TTGCCCTGCTAGGAATTAGAACAGACACCATGTCCAGGACAGTGTACTTCTTCTG
CATGATGTGGTAGACTCCCTTGTGGCTGTGCAGTGATACTGAGAAAATACATGAA
CAGAAACTGCCAGGTGAAACAGCACGTAACCTAGTGAGTGACTGTACTCCCTTAGGA
ATGCTGATTAGAGTCACCTCTTGACTAGGTCCAGGATCCCTGTCCCTGGAGTAG
GGACTAACTATAGCACAAAGTAATATGTGCCATGCTATTGTGAAATGTTGGCTTTC
TAAACGACTAAAGGATTGTTGGTTTGCTTAAGTTGAACCAAATCCTAGAGCCAG
CTGATAATATTAATAATCTGGAGGAGAGAATAATGATGTACCAATAAGTGGAGATT
CCTTATGATGTATGCTAGGTTATGAAAGATGTAACCTTTCTCCTTTTCTG
TGGACTTTGTATTTACTGCATGTTCTTCATTAAATCAATAAGAGTAAATTGTCA
AAAAAAAAAAAAAA

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CTCATCTGTACACACCTCATGGATGGCATGAATGAGCTGGCGATTGCTTACATCCTGCAG
GGGGTGTGAAGGCCCTGACTACATCCACCATGGATATGTACACAGGAGTGTCAAA
GCCAGCCACATCCTGATCTGTGGATGGAAAGGTCTACCTGTCGGTGCAGCAAC
CTCAGCATGATAAGCCATGGCAGCGGAGCGAGTGGTCCACGATTTCCTAAGTACAGT
GTCAAGGTTCTGCCGTGGCTCAGCCCCGAGGTCCAGCAGAATCTCCAGGGTTATGAT
GCCAAGTCTGACATCTACAGTGTGGAAATCACAGCCTGTGAACGGCCAACGGCCATGTC
CCCTTAAGGATATGCCCTGCCACCCAGATGCTGCTAGAGAAACTGAACGGCACAGTGC
TGCCTGTTGGATACCAGCACCCTCCGCTGAGGAGCTGACCATGAGCCCTCGCGCTCA
GTGGCCAACCTGGCCTGAGTGACAGCCTGACCCAGCAGCAGGGGGCCCTCAACGGT
GACTGCCCTCCCACCCCTACCAACCAGAACCTTCTCCCCCAGTCCACCACTTGTGGAG
CAGTGCCTCAGCGAACCCGGATGCCAGGCCAGTGCCAGCACCTCCTGAACCACTCT

Fig. 9E

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Title: PAK5 SCREENING
METHODS

Inventor(s): Gregory PLOWMAN
et al.

Attorney Docket No.: 034536-0688

TTCTTCAAGCAGATCAAGCAGCTGCCTCAGAGGCTTGCCCCAATTGCTCGTCCCTGTC
ACCCCCATCACCAATTGAGGGCAGCCAGTCTCAGGACCACAGTGGAAATCTTGGCCTG
GTAACAAACCTGGAAAGAGCTGGAGGTGGACGATTGGGAGTTCTGAGCCTCTGCAAAC
GCGCATTCTCCAGCCAGGGATGCAGAGGCCACCCAGAGGCCCTTGAGGGCCGGCCAC
ATTCCCAGCCCTGGCAGATTGGGAGAAAGGACATTCTCCAGGAAAGTTGACTGCT
GACTGATTGGAAAGAAAATCCTGGAGAGATACTTCAGTGCCTCAAGGCTTGAGACAC
AAGGGAAATCTCAACAAACCAGGGATCAGGAGGGTCAAAGCCGACATTCCCAGTCTGTGA
GCTCAGGTGACCTCCCGCAGAAGAGAGATGCTGCTCTGGCCCTGGGAGCTGAATTCCA
AGCCCAGGGTTGGCTCCTAAACCGAGGACGCCACCTCTCCAGTGCTTGCACCA
GCCTCATTCTATTAACTTGCTCTCAGATGCCTCAGATGCTATAGGTAGTGAAGGGC
AAGTAGTAAGCTGCCTGCCTCCCTCCCTCAGACCTCTCCCTCATAATTCCAGAGAAGGG
CATTCTGTCTTTAAAGCACAGACTAAGGCTGGAACAGTCCATCCTTATCCTCTTCTG
GCTTGGGCCCTGACACCTAAGTCTTCCCACGGTTATGTGTGCTCATTCTTCCC
ACCAAGAATCCATCTAGCGCCTCCTGCCAGTGCCTGGTCTTCTCAAGGGCCATC
AGTGTCTTGCTAGCTTGAGGGCTTAAGTCCTATGCTGTGTTAGTTGTTAGTCAGAAC
AAATTAAAATTTCAGAGACGCTG

SEQ ID NO: 9 ZC1 HUMAN

GAGACCATGGCGAACGACTCTCCCGCGAAAAGTCTGGTGGACATCGACCTCTCCTCCCTG
CGGGATCCTGCTGGATTTGAGCTGGTGGAAAGTGGTGGAAATGGCACCTATGGACAA
GTCTATAAGGGTCGACATGTTAAAACGGGTAGTTGGCAGCCATCAAAGTTATGGATGTC
ACTGAGGATGAAGAGGAAGAAATCAAACCTGGAGATAAAATATGCTAAAGAAATACTCTCAT
CACAGAAACATTGCAACATATTATGGTCTTCACTAAAAAGAGCCCTCCAGGACATGAT
GACCAACTCTGGCTTATGGAGTTCTGTGGGGCTGGTCCATTACAGACCTTGTGAAG
AACACCAAAGGGAACACACTCAAAGAAGACTGGATCGCTTACATCTCCAGAGAAATCTG
AGGGGACTGGCACATCTTCACATTCATCATGTGATTCACCGGATATCAAGGGCCAGAAT
GTGTTGCTGACTGAGAATGCAGAGGTGAAACTTGTGACTTGGTGTGAGTGTCTAGCTG
GACAGGACTGTGGGGCGGAGAAATACGTTCAAGGCACCTATGATTACAGAAGTGTATTTGGTCT
TGTGGCATTACAGCCATTGAGATGGCAGAAGGTGCTCCCCCTCTGTGACATGCATCCA
ATGAGAGCACTGTTCTCATCTCCAGAAACCTCCTCCCCGGCTGAAGTCAAAAAAATGG
TCGAAGAAGTTTTAGTTTATAGAAGGGTGCCTGGTGAAGAATTACATGCAGCGGCC
TCTACAGAGCAGCTTGAACATCCTTATAAGGGATCAGCCAAATGAAAGGCAAGTT
AGAATCCAGCTTAAGGATCATATAGATCGTACCGAGGAAGAAGAGGAGGAAGTGCCTGAACAGGAAGGA
ACTGAGTATGAGTACAGTGGAGTGAGGAAGAAGAGGAGGAAGTGCCTGAACAGGAAGGA
GAGCCAAGTTCCATTGTGAACGTGCCTGGTGAAGTCTACTCTCGCCAGATTCTGTGAGA
CTGCAGCAGGAGAACAGGAACGTTCCGAGGCTCTCGGAGACAACAGTTACTACAGGAG
CAACAGCTCCGGAGCAGGAAGAATATAAAAGGCAACTGCTGGCAGAGAGACAGAACGG

Fig. 9F
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Title: PAK5 SCREENING
METHODS

Inventor(s): Gregory PLOWMAN
et al.

Attorney Docket No.: 034536-0688

ATTGAGCAGCAGAAAGAACAGAGGCACGGCTAGAAGAGCAACAAAGGAGAGCAGGGAA
GCTAGAAGGCAGCAGGAACGTGAACAGCGAAGGAGAGAACAGAAGAAAAGAGGCCTA
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CGGGAGATGGAGGAGCAGCGCAGGAGAGGAGCTCAAGAGGCAGTTGCAACAAGAACAA
GCATATCTCCTGTCTACAGCATGACCATAGGAGGCCGACCCGCAGCACTCGCAGCAG
CCGCCACCACCGCAGCAGGAAAGGAGCAAGCCAAGCTTCATGCTCCGAGGCCAAAGCC
CACTACGAGCCTGCTGACCGAGCGAGAGGTGGAAGATAGATTAGGAAAACTAACCAC
AGCTCCCTGAAGCCCAGTCTAACGAGACAGGCAGAGTATTGGAGCCACCAGTGCCTCC
CGATCAGAGTCTTTCAATGGCAACTCCGAGTCTGTGCATCCGCCCTGCAGAGACCA
GCGGAGCCACAGGTTCTGTGAGAACACATCTCGCTCCCTGTTCTGTCCCGAGAT
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ATTGAGCCCAGGCTTCTGTGGAGAGAGTGGAGAACAGCTGGTGCCTGACCTGGCAGTGGC
AGCTCCTCAGGGTCCAGCAACTCAGGATCCCAGCCGGGCTCACCTGGTCTCAGAGT
GGCTCCGGGAACGCTTCAGAGTGAAGATCATCCAAAGTCTGAAGGCTCTCCATCTCAG
CGCCTGGAAAATGCAGTGAAAAACCTGAAGATAAAAGGAAGTTTCAAGACCCCTCAAG
CCTGCTGATCTGACCGCACTGCCAAAGAGCTTCGAGCAGTGGAGATGTACGGCACCT
CACAAAGTAACGGACTACTCCTCATCCAGTGAGGAGTCGGGACGACGGATGAGGAGGAC
GACGATGTGGAGCAGGAAGGGCTGACGAGTCCACCTCAGGACCAGAGGACACCAGAGCA
GCGTCATCTCTGAATTGAGCAATGGTGAACCGGAATCTGTGAAAACCATGATTGTCCAT
GATGATGTAGAAAGTGAGCCGGCATGACCCATCCAAGGAGGGCACTCTAATCGTCCGC
CGGACTCAGTCCGCTAGTAGCACACTCCAGAAACACAATCTCCTCCTCCTTACACCT
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GGCTCAGTGGTCAATGTGAATCCTACCAACACTAGGCCACAGAGTGAACCCCGGAGATT
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GAGGAAGGCCAGAGGTTGAAAGTGATCTATGGATCCTGTGCTGGATTCCATGCTGTTGAT
GTGGATTCAAGGATCAGTCTATGACATTATCTACCAACACATATCCAGTGTAGCATCAA
CCCCATGCAATCATCATCCTCCCCAATACAGATGGAATGGAGCTCTGGTGTGCTATGAA
GATGAGGGGTTATGAAACACATATGGAAGGATACCAAGGATGTAGTTCTACAGTGG

Fig. 9G
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Title: PAK5 SCREENING
METHODS

Inventor(s): Gregory PLOWMAN
et al.

Attorney Docket No.: 034536-0688

GGAGAGATGCCTACATCAGTAGCATATATTGATCCAATCAGACAATGGGCTGGGGAGAG
AAGGCCATAGAGATCGATCTGTGAAACTGGTCACTTGGATGGTGTGTTCATGCACAAA
AGGGCTCAAAGACTAAAATTCTGTGTAACGCAATGACAAGGTGTTCTTGCTCTGTT
CGGTCTGGTGGCAGCAGTCAGGTTATTCATGACCTTAGGCAGGACTTCTTGAGC
TGGTAGAAGCAGTGTGATCCAGGGATTACTGGCCTCCAGAGTCTTCAAGATCCTGAGAAC
TTGGAATTCTTGTAACT

SEQ ID NO: 10 ZC2 HUMAN

GCTTTCGGGGAGGTCTATGAGGGCGTCATGTCAAAACGGGCCAGCTTGAGCCATCAAG
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GACTTGTGGTCTTGGTATCACGCCATTGAAATGGCAGAAGGTGCTCCCCCTCTGT
GACATGCACCCATGAGAGCTCTCTTCATCCCCCGGAATCCAGCGCCTGGCTGAAG
TCTAAGAAGTGGTCAAAAAAATTCCAGTCATTGAGAGCTGCTTGGTAAAGAACATC
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GAGCGACAGGTCCGCATTCAACTCAAGGACCATATTGATAGAACAAAGAACAGCAGG
AAAAAGATGAGACAGAGTATGAGTACAGTGGAAAGTGAGGAAGAACAGGAGGAATGAC
TCAGGAGAGCCCAGCTCCATCCTGAATCTGCCAAGGGAGTCAGCCTGGAGGGACTT
CTGAGGCTGCAGCTGCCAACAGGAGCGTTCTGAGGCCACTACGGAGGCAGCAGCTGGAG
CAGCAGCAGCGGAGAACATGAGGAGCACAAGCGGAGCTGCTGGCCAGCGTCAGAACGC
ATCGAGGAGCAGAAAGAGCAGAGGCGGCGCTGGAGGAGCAACAAAGGCAGAGAACAG
CTGCGGAAGCAGCAGGAGAGGGAGCAGCGCCGGCACTATGAGGAGCAGATGCCTGGAG
GAGGAGAGGAGGCAGCTGGAGCATGAAACAGGAATATAAGCGCAAACAAATTGGAAAGAACAG
AGACAAGCAGAAAGACTGCAGAGGAGCTAAAGCAAGAACAGAGACTACTTAGTTCCCT
CAGCATCAGCGGCAGGAGCAGAGGCCGTGGAGAACAGCCACTGTACCATCAAAGAA
GGAATGAGTCCTAGTGAGAACGCCAGCATGGCCAAGGGAGGTAGAACAGGTCAAGGCTC
AACCGGCAAAGTTCCCTGCCATGCCATGCTCACAGGTTGCCAACAGGATATCTGACCCCAAC
CTGCCCTAACGGTGGAGTCCTCAGCATTAGTGGAGTTAGCCTGCTGAACACCCCC
ATGCTCAGACCAGTCGATCCCCAGATCCCACATCTGGTAGCTGTAAAATCCAGGGACCT
GCCTTGACCGCCTCCAGTCAGTGACGAGCAGGCCACAAAGGGCTCTGGTTTCAG
GAGGCTCTGAACGTGACCTCCACCGCGTGGAGATGCCACGCCAGAACACTCAGATCCCACC
TCGGAAAATCCTCTCCCCACTCGCATTGAAAAGTTGACCGAAGCTTGGTTACGA

Fig. 9H
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Title: PAK5 SCREENING
METHODS
Inventor(s): Gregory PLOWMAN
et al.
Attorney Docket No.: 034536-0688

CAGGAAGAAGACATTCCACCAAAGGTGCCTCAAAGAACAACTTCTATATCCCCAGCATT
GCCAGAAAGAATTCTCCTGGGAATGGTAGTGCTCTGGGACCCAGACTAGGATCTAACCC
ATCAGAGCAAGCAACCCCTGATCTCCGGAGAACTGAGCCCCTGAGCTCCAGCACCCCTAGCTCCAGCTCCAA
AGGACCAGCAGTGGCAGTTCTCCAGCTCCAGCACCCCTAGCTCCAGCTCCAGCTCCAA
GGAGGCTCCAGCCTGGATCACAAAGCAGGATCCAGTGAAACGCACCAAGAGTTCGAGCCAAC
AGTAAGTCAGAAGGATCACCTGTGCTCCCCATGAGCCTGCCAAGGTGAAACCAGAAAGAA
TCCAGGGACATTACCCGGCCAGTCGACCAGCTAGCTACAAAAAGCTATAAGATGAGGAT
CTGACGGCATTAGCCAAAGAACTAAGAGAACTCCGGATTGAAGAAACAAACCGCCCAATG
AAGAAGGTGACTGATTACTCCTCCTCCAGTGAGGAGTCAGAAAGTAGCGAGGAAGAGGAG
GAAGATGGAGAGAGCGAGACCCATGATGGGACAGTGGCTGTAGCGACATAACCCAGACTG
ATACCAACAGGAGCTCCAGGCAGCAACGAGCAGTACAATGTGGGAATGGTGGGAGCAG
GGGCTGGAGACCTCTCATGCGGACAGTTAGCAGCGGAGTATTCAAGAGAAGGAACCTTG
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GCTGCCACATCAACCTCCCTGACCTGGTGCAGCAGGCCATTCTCAGCTGGAACCCCG
ACTGAGGGACTGGGGCGCTCAACCCATTCCAGGAGATGGACTCTGGACTGAATAT
GGCATGGGGAGCAGCACAAAGCCTCTCACCCCCCTTGTGGACCCAGAGTATAACCAAG
ACGTCTCCACTGATGAAGATGAAGAGGATGAGGAATCATCAGCCGAGCTCTGTTACT
GGCGAACTTCTTAGGCAAGAACAGGCCAAACTCAATGAAGCAAGAAAGATTCTGGTGGTA
AATGTAAACCCAACCAACATTGGCCTCATAGCGACACACCAGAAATCAGAAAATACAAG
AAACGATTCAACTCAGAAATACTTGTGCAGCTCTGTGGGTGTAACCTCTGGTGGGG
ACTGAAAATGGCCTGATGCTTTGGACCGAAGTGGCAAGGCAAAGTCTATAATCTGATC
AACCGGAGGCAGTTAGCAGATGGATGTGCTAGAGGGACTGAATGCTCTGTGACAATT
TCAGGAAAGAAGATAAGCTACGAGTTACTATCTTCATGGTTAAGAAACAGAAATACTA
CATAAATGACCCAGAAGTAGAAAAGAAACAAGGCTGGATCAGTGTGGGGACTTGGAAAGG
TGTATACATTATAAGTTGTTAAATATGAAAGGATCAAATTGGTGTGATTGCCCTAAAG
AATGCTGTGGAAATATATGCTTGGCTCTAAACCGTATCATAAATTGATGGCATTAAAG
TCTTTGCAGATCTCAGCACAAGCCTCTGCTAGTTGATCTCACGGTAGAAGAAGGTCAA
AGATTAAGGTTATTTGGTCACACACTGGTTCCATGTAATTGATGTTGATTGAGGA
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GTCATCTGCCTAAACAGATGGAATGGAATGCTTGGTGTGCTATGAGGATGAGGGGTG
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TTAAAGTTCTATGTGAAAGAAATGATAAGGTATTGGTGTGATCCGTGCGATCTGGAGGA
AGTAGCCAAGTGTGTTCTAGACCCTCAACAGAAATTCCATGATGAACTGGTAACAGAAG
AGCACTTGGCACTTATCTCATGGCGTTATTCTAATTAAAAGAACATAACTCATGTGG
ACTTATGCCAGTCTAGAGGCAGAATCAGAAGGCTTGGTTGAACATATCGCTTCCCTTT
TCCTCTCCCTCCGCCCTCCAGTACAGTCCATCT

Fig. 9 I

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Title: PAK5 SCREENING
METHODS

Inventor(s): Gregory PLOWMAN
et al.

Attorney Docket No.: 034536-0688

SEQ ID NO: 11 ZC3 HUMAN

GCATTTGGGGAGGTGTATGAGGGTCGGCATGTCAAGACGGGGCAGCTGGCTGCCATCAAG
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CCGGGAAACGATGACCAGCTCTGGCTGGTATGGAGTTCTGTGGTCTGGTTAGTGACT
GACCTGGTAAAGAACACAAAAGGCAACGCCCTGAAGGGAGGACTGTATGCCCTATATCTGC
AGGGAGATCCTCAGGGGTCTGGCCCATCTCCATGCCACAGGTGATCCATCGAGACATC
AAGGGGCAGAATGTGCTGCTGACAGAGAATGCTGAGGTCAAGCTAGTGGATTGGGGTG
AGTGCTCAGCTGGACCGCACCGTGGCAGACGGAACACTTCATTGGACTCCCTACTGG
ATGGCTCCAGGGTCATGCCCTGTGATGAGAACCTGATGCCACCTATGATTACAGGAGT
GATATTGGTCTCTAGGAATCACAGCCATCGAGATGGCAGAGGGAGCCCCCTCTGTGT
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GAGGAAGGAGAGCCAAGCTCCATCATGAACGTGCCCTGGAGAGTCGACTTACGCCGGAG
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CAGCGCGCATAGAGGAGCAGAAGGGAGGAGCGGGCGCGCGTGGAGGAGCAACAGCGCG
GAGCGGGAGCAGCGGAAGCTGCAGGAGAAGGAGCAGCAGCGCGGGCTGGAGGACATGCAG
GCTCTGCCGGGGAGGAGGAGCGGGCGAGGAGCAGCGAGCAGGAATATATTGTCAC
AGGCTAGAGGAGGAGCAGCGACAGCTCGAGATCCTCAGCAACAGCTGCTCCAGGAACAG
GCCCTGCTGTTGAATACAAGCGGAAGCAGCTGGAGGAGCAGCGGAGTCAGAACGTCTC
CAGAGGCAGCTGCAGCAGGAGCATGCCACTCAAGTCCCTGCAGCAGCAGCAACAGCAG
CAGCAGCTTCAAGAACACAGCAGCAGCAGCTCCTGCCTGGGACAGGAAGCCCTGTAC
CATTATGGTGGGGCATGAATCCCCTGACAAACCCAGCCTGGGGCAGAGGGTAGAAGAG
AGAACAAAGGATGAACAAGCAGCAGAAGCTCCCTGGCCAAGAGCAAGCCAGGCAGCACG
GGGCTGAGCCCCCATCCCCCAGGCCTCCCCAGGGCCCCCAGGACCCCTTCCAGACT
CCTCCTATGCAGAGGCCGGTGGAGCCCCAGGAGGGACCGCACAAGAGCCTGGCACAC
CGGGTCCCCTGAAGCCATATGCAGCACCTGTACCCGATCCCTGCAGGACAG
CCCACCCGAAACCTGGCTGCCCTCCAGCCTCCATGACCCCGACCCCTGCCATCCCCGA
CCCACGTGCCACGCCAGTGCCAGGGAGCTGTATCCGCCAGAATTAGACCCCCACCTCT
GAAGGACCTGGCCCCAGCCGAATCCCCAGCCTGGTCCGCCAGATAACGAGGCCCA
CCCAAGGTGCCCTAGAGGACCTCATCTATGCCACTGCCCTTAACACCAAGTGGGCCGA
GGGTCCCAGGCCAGCCAGGGCAGTCCGTGCCAGACCTCGCAGCAACTCCGCCCTGGCAAATC
TATCTGCAAAGGCGGGCAGAGCGGGCACCCAAAGCCTCCAGGGCCCCCTGCTCAGCCC
CCTGGCCCGCCCAACGCCCTAGTAACCCGACCTCAGGAGGAGCAGCAGCCCTGGCTGGGAA

Fig. 9J

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Title: PAK5 SCREENING
METHODS

Inventor(s): Gregory PLOWMAN
et al.

Attorney Docket No.: 034536-0688

CGCTCGGACAGCGTCTTCCAGCCTCTCACGGGCACCTCCCCAGGCTGGCTCACTGGAG
CGGAACCGCGTGGGAGTCTCCTCCAAACCGGACAGCTCCCTGTGCTCTCCCCGGGAAT
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AAAGAGCGGACTCTGGACGAGGCCCTGGCCTCCAAAGAAGGCCATGGACTACTCGTCG
TCCAGCGAGGAGGTGAAAGCAGTGAGGACGACGAGGAGGAAGGCGAAGGCAGGGCCAGCA
GAGGGGAGCAGAGATAACCCCTGGGGCGCGATGGGATAACAGACAGCGTCAGCACCATG
GTGGTCCACGACGTGAGGAGATCACCGGGACCCAGCCCCATACGGGGCGGCACCATG
GTGGTCCAGCGCACCCCTGAAGAGGAGCGGAACCTGCTGCATGCTGACAGCAATGGGTAC
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GGCAAGAGCTCGTTACGATGTTGGATCTAGGGATCTACCGCTGGAGGGCAGTGGG
GACAGCATCCCCATCACAGCCTAGTGGGTGGAGAGGGCACTCGGCTCGACAGCTGCAG
TACGACGTGAGGAAGGGTTCTGTGGTCAACGTGAATCCCACCAACACCCGGGCCACAGT
GAGACCCCTGAGATCCGGAAGTACAAGAAGCGATTCAACTCCGAGATCCTCTGTGAGCC
CTTGCCCCCTGCTGGTGGGACGGAGAACGGCTGATGTTGCTGGACCGAAGT
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CCCTACCACAAATTCTGGCCTTCAAGTCCTTGCCGACCTCCCCACCGCCCTGCTG
GTCGACCTGACAGTAGAGGAGGGCAGCGGCTCAAGGTATCTATGGCTCCAGTGTGGC
TTCCATGCTGTGGATGTCACTCGGGAACAGCTATGACATCTACATCCCTGTGACATC
CAGAGCCAGATCACGCCCATGCCATCTTCCCTCCCCAACACCGACGGCATGGAGATG
CTGCTGTGCTACGAGGACGAGGGTGTACGTCAACACGTACGGCGCATATTAGGAT
GTGGTGTGAGTGGGGAGATGCTACTTCTGTGGCCTACATCTGCTCCAACCAAGATA
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GTCTTCATGACAAACGAGCTCAGAGGCTCAAGTTCTGTGAGCGGAATGACAAGGTG
TTTTTGCTCAGTCCGCTCTGGGGCAGCAGCCAAGTTACTTCTGACTCTGAACCGT
AACCGCATCATGAACTGGTACGGGCCCTGGCTGGGCTGTCCCACACTGGACCCAGC
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TTACTGGTTGATTCACTGGAGCCTGCTGGGAACGTGACCTCTGACCCCTGA

SEQ ID NO: 12 ZC4 HUMAN

CAATGTTAACCCACTCTATGTCCTCTGCATGTAAGGAGGACTAATCCACATGTATGA
AAAGGAGTTCACTTCTGAGATCTGCTGTGGTCTTGTGGGAGTCAATTGCTGTTGGG
AACCGATCTAATCTATCTGATGGACAGAAGTGGAAAGGCTGACATTACTAAACTTAT
AAGGCGAAGACCATTCCGCCAGATTCAAGTCTTAGAGCCACTCAATTGCTGATTACCAT

Fig. 9K
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Title: PAK5 SCREENING
METHODS
Inventor(s): Gregory PLOWMAN
et al.
Attorney Docket No.: 034536-0688

CTCAGGTATAAGAACAGACTTCGGGTGTATCATCTGACCTGGTTGAGGAACAAAGATTT
GAATAATGATCCAGAAAGTAAAAGAAGGCAAGAAGAAATGCTGAAGACAGAGGAAGCCTG
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AACATATATTGCAATTGCTTGAAATCATCAATTACCTTATGCATGGCACCAAGTC
CTTGATGAAAGCACTGCTATTAAAGTATTCCAACACTTGATCATAAGCCAGTGACAGT
TGACCTGGCTATTGGTTCTGAAAAAAGACTAAAGATTTCTTCAGCTCAGCAGATGGATA
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CCTGAAATGTGAAAGACATACCATCTTCTATAGCTTGAATGTACACAGCGAACAC
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AGAAAAACATCGGCAA
ACT

SEQ ID NO: 17 KHS2 HUMAN

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AAAAAAGACCTACTGCTGAAAAATTATTACAGCATCCTTGTAAACACAACATTGACAC
GGTCTTGGCAATCGAGCTGTTGGATAAGTAAATAATCCAGATCATTCCACTTACCATG

Fig. 9L
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Title: PAK5 SCREENING
METHODS

Inventor(s): Gregory PLOWMAN
et al.

Attorney Docket No.: 034536-0688

ATTCGATGATGATGATCCTGAGCCTCTGTTGCTGTACCACTAGAATTCACTCAACAA
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CACCTCCCAGATTACCCCCACACAAACCTGTTGCCTAGGAAATGGAATGAGCTCCTTCC
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CAGCAAATAGCAATTGTACATCCTGGCGGGTCAAGAAAACAGTTACTGAGAATTGTTG
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GTACAAGTAAGTGTCTTATCTGTACAGATGAAATGTTGATGAAAATGCAATTGGGTTA
ATATTGTTAAGAATTCTTAGTATATTCTGGGTGTGGCTATATTACAAAATGGGATGCTG
GCAATGAAACAATACATTAAACACTATTGTTATTATGTAATTGAGATATGA

Fig. 9M
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Title: PAK5 SCREENING
METHODS
Inventor(s): Gregory PLOWMAN
et al.
Attorney Docket No.: 034536-0688

ATATAAATCTTGTAACTTTAAAATTGTAATGGAGGCTGTAATCATTATAATCTTTT
AATTTAATGCAAGTA~~C~~ACTGGTGTATATTGACAAAGTATTGATATGTGATGTATT
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ACATTTTGAATCACAGAATAGCGGTACCATGATAGAATACTGCAATTGTTGAGTAATT
ACAGTATGCACAAAGAATTAAATTAGCATTATTAAAGAGTCCTCACTAAACATTCTATG
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ATACATGGCCAAAATAATTAGTTACTACCTCATACAAACAATAATGGTTACTACACA
TCACAGGAACCTAGTTTGGTTAAGTCATTGATTGCTTTCCAATGGAATATGT
ATATACCAGGTTTAGCAAAATGCACACTTTGGCTTTGGTATATGTTCTTATAT
TTAATGTGAGTATATACTAAGAACAAACTAAATTGTGATTTATGATCTCATTATT
TTAATGATAATGGTTAAATATGTTCTGATTGTACATATTGAAAATAACATGTTT
TTT

SEQ ID NO: 19 SULU1 HUMAN

GGGAGGGTCCTTGTGGCGCCGGCGGGCGGGTCTGCGTGGAGAGTGGGACGCAACGCCG
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CCGCCGGGAACAAGCCACAGGAGAGCGACTCAGGAACAAGTGTGGAGAGGAAGCGCG
GCGCGGGCGCCGGCCGGGGTGGTGAAGCAGCAGGTCTGAGGTTGCATCATAAATACAAA
GGACTGAAGTATAAAAGAGAAAAGAGAAGTTGCTGCTAAATGAATCTGAGCAATATG
GAATATTTGTGCCACACACAAAAAGGTACTGAAGATTACCCCCAAAAAAATTGTCA
ATGAGAAATAAAGCTAACTGATATCAAAAGCAGAGCCTGCTACTGGCCATCATGCGT
AAAGGGGTGCTGAAGGACCCAGAGATTGACGATCTATTCTACAAAGATGATCCTGAGGAA
CTTTTATTGGTTGCATGAAATTGGACATGGAAGTTGGAGCAGTTATTGCTACA
AATGCTCACACCAATGAGGTGGCAATTAGAAGATGCTCTATAGTGGGAAGCAGACC
CATGAGAAATGGCAAGATATTCTTAAGGAAGTTAAATTGACATTGAAGCATTGCG
AATACTATTGAGTACAAAGGTGTTACTTGAAGAACACACTGCTGGTTGGTATGGAA
TATTGCTTAGGCTAGCCTCTGATTAGAAGTTGATGACCTACATTCTCATGCA
TTGATTGATAGGGATATTAAAGCAGGAAATTCTCTAACAGAGCCAGGTAGGTAAAA
CTAGCTGATTTGGATCTGCTCAATGGCTCTGCAACTCCTCGTGGCACACCT
TACTGGATGGCTCCAGAGGTGATCTTAGCTATGGATGAAGGACAGTATGATGGAAAGTT
GATATTGGTCAATTGGCATCAATTGTATTGAATTGGCGGAACGGAAAGCCGCCCTTTC
AACATGAATGCAATGAGTGCCTTATATCACATTGCCAGAATGACTCCCCAACGTTACAG
TCTAATGAATGGACAGACTCCTTACGGAGATTGTTGATTACTGCTTGAGAAAATAACCT
CAGGAAAGGCCAACATCAGCAGAACTATTAGGCATGACTTTGTTGACGAGACCGGCCA

Fig. 9N
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Title: PAK5 SCREENING
METHODS
Inventor(s): Gregory PLOWMAN
et al.
Attorney Docket No.: 034536-0688

CTACGTGTCTCATTGACCTCATACAGAGGACAAAGATGCAGTCGTGAGCTAGATAAC
CTACAGTACCGAAAAATGAAAAAAATCTTTCCAAGAGACACGGAATGGACCCCTTGAAT
GAGTCACAGGAGGATGAGGAAGACAGTGAACATGGAACCAGCCTGAACAGGGAAATGGAC
AGCCTGGCAGCAACCATTCCAAGCATGTCGTGAGCACAGGCAGCCAGAGCAGC
AGTGTGAACAGCATGCAGGAAGTCACTGGACGAGAGCAGTCCGAACCTGTATGATGCAC
GATGACGAAAGCACAATCAATTCCAGCTCCTCGTCGTGATAAGAAAGATCATGTATT
ACAAGGGATGAGGCAGGGCCACGGCGATCCCAGGCCTGAGCCGCGCTACCCAGTCAGTT
CAGAGCCAGGCCCTCCACTACCGGAACAGAGAGCGCTTGCCACGATCAAATCAGCATCT
TTGGTTACACGACAGATCCATGAGCATGAGCAGGAGAACGAGTTGCGGGAACAGATGTCA
GGTTATAAGCGGATGCGGCCAGCACAGAAGCAGCTGATGCCCTGGAGAACAGCTG
AAGGCTGAGATGGACGAGCACCGCCTCAAGCTACAGAAGGAGGTGGAGACGCATGCCAAC
AACTCGTCATCGAGCTGGAGAAGCTGGCCAAGAAGCAAGTGGCTATCATAGAAAAGGAG
GCAAAGGTAGCTGCAGCAGATGAGAAGAAGTTCCAGCAACAGATCTGGCCAGCAGAAG
AAAGATTGACAACACTTCTTAGAAAGTCAGAAGAACGAGTATAAGATTGTAAGGAAAAAA
ATAAAAGAGGAAATGAATGAGGACCATAGCACACCCAAGAAAGAGAACAGAGCGGATC
TCCAAACATAAAGAGAACTTGCAAGCACACACAGGCTGAAGAGGAAGCCCACCTCTCACT
CAACAGAGACTGTACTACGACAAAAATTGCGTTCTCAAGCGGAAATAAAGGAGGACCCAGAAG
CGGCACGAGGTGGAGCAGCAGAACATTGGGAGGAACTAAATAAAGGAGGACCCAGAAG
GAGATGGAGCATGCCATGCTAATCCGGCACGACGAGTCCACCCGAGAGCTAGAGTACAGG
CAGCTGCACACGTTACAGAAGCTACGCATGGATCTGATCCGTTACAGCACAGACGGAA
CTGGAAAACCAGCTGGAGTACAATAAGAGGCAGAAAGAGAACAGTGCACAGAAAGCATGTC
ATGGGACTTCGGCAACAGCCAAAAACTTAAAGGCCATGGAAATGCAAATTAAAAACAG
TTTCAGGACACTTGCAAAGTACAGACCAACAGTATAAGCACTCAAGAACATCACCAGTTG
GAAGTTACTCCAAAGAATGAGCACAAAACAATTCTAAAGACACTGAAAGATGAGCAGACA
AGAAAACCTGCCATTGGCAGAGCAGTATGAACAGAGTATAATGAAATGATGCCCTCT
CAAGCGTTACGGCTAGATGAGGCTCAAGAAGCAGAACATGCCAGGCCTTGAGGCTACAGCTC
CAGCAGGAAATGGAGCTGCTCAACGCCCTACCAAGAGCAGGAAATCAAGATGCAAACAGAGGCA
CAACATGAACGTGAGCTCCAGAAGCTAGAGCAGAGAGTGTCTGCGCAGAGCACACCTT
GAGCAGAAGATTGAAGAGGAGCTGGCTGCCCTCAGAAGGAACGCAGCGAGAGAATAAAG
AACCTATTGGAAAGGCAAGAGCGAGAGATTGAAACTTTGACATGGAGAGCCTCAGAATG
GGATTGGAAATTGGTTACATTAGATTTCCTAAGGAGGACTACAGATGAGATTAAATT
TTTGCCATTACAAAAAAAGAAAACAGAAAAAAATTCAAGACCCCTGCAA
AACACATTCCCCATTAAACGGGCGTTGCTCTCACTCTCTCTCTTACTCTTACTG
ACATCGTGTGGACTAGTGCCTGTTATTCTTACTCCATCAGGGGCCCTCCCTCCCC
CGTGTCAACTTCAGTGCCTGGCAAAACCTGGCGTCTTCTATTACAGTACACGTCA
CAGTATTGATGTGATTCAAAATGTTCAGTGAACACTTGGAGAACAGTTAACAAAACC
AATAAACCAACAACAAAAAGTGGATGTATATTGCTTAAGCAATCACTCATTACCACC
AATCTGTGAAAGTAAAGCAAAAATAATAATAATGCCAAGGGGGAGAGACACAA

Fig. 9 O
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Title: PAK5 SCREENING
METHODS

Inventor(s): Gregory PLOWMAN
et al.

Attorney Docket No.: 034536-0688

TATCCGCAGCCTTACACCTTAACTAGCTGCTGCATTATTTATTTATTTATTTTG
GTATTATTATCAGGAATAAAAAAAACAAAGTTTATTAAAGATTGAAAATTGATACA
TTTACAGAAACTAATTGTGATGTACATATCAGTGGTACATATTACTTTGGGG
ACGGGGGTGGTGGGTGAAGAGATCTTGTGATTAAAGAACCTGCTGGCAAGAGTT
AACTGTCTTCAGCATATTCTGATTGTATCATAATCATTTCTGCTGTTGCAGAGGATGT
GAATAACACTTAAGGAGCTCACAGAACATCCCAGTAGCACAAATTGGGCTTGGCAAATCGT
TATTTGTGTATAAGAAGGAATTAAAGGAGAGGTATTACTTATTTCATATTGTATTAA
CTGTTCTCTGATCAAATTTCCTCCTGTTCTCCCCACCTCCCTCCTT
TCCAGTTCAGTATTGGAGTTAACACTGTCTCTCAATCAGATCATCTTGATCTTCT
TTATCTCCCTCCCTCTAAGTCCCATTCTGGTCATAAAATTGCATTATTACAC
TTCAAACTGTGTATTTCCTACAATAAAAAATGATGAAAAA

SEQ ID NO: 20 SULU3 HUMAN

TATTGAATTGGCGGAACGGAAGCCTCCTTATTAAATATGAATGCAATGAGTGCCTTATA
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CAACTTTGTAGATTCTTGCCTCCAGAAAATCCCTCAAGATCGACCTACATCAGAGGAAC
TTAAAGCACATATTGTTCTCGGAGCGCCCTGAAACCGTGTAAAGATCTCATTCA
GAGGACAAAGGATGCAGTAAGAGAGCTGGACAATCTGAGTATCAGAACAGATGAAGAAAC
CCTTTCCAGGAGGCACATAATGGACCAGCAGTAGAAGCACAGGAAGAAGAGGAACA
AGATCATGGTGTGGCCGGACAGGAACAGTTAATAGTGTGAAAGTAATCAATCCATTCC
CAGCATGTCCATCAGTGCAGCAGCCAAAGCAGTAGTGTAAAGTCTTCAGATGTCTC
AGATGACAAGAGTGAGCTAGACATGATGGAGGGAGACCACACAGTGTCTAACAGTTC
TGTTATCCATTTAAACAGAGGAAGAAAATTACAGAGAACAGGGAGATCTAGAACAG
AGCATCAGATCCACAATCTCACCCTAAGTATCTGTCACAAATCACACTATGTAATCG
AGAACACTTGCTACTATACGGACAGCATCACTGGTTACGAGGCAAATGCAAGAACATGA
GCAGGACTCTGAGCTTAGAGAACAAATGTCTGGCTATAAGCGAATGAGGCAGAACATCA
AAAGCAACTGATGACTCTGGAAAACAAGCTAAAGGCTGAGATGGATGAACATCGCCTCAG
ATTAGACAAAGATCTTGAAACTCAGCGTAACAATTGCTGCAGAAATGGAGAAACTTAT
CAAGAAACACCAGGCTGCCATGGAGAAAGAGGCTAAAGTGTGTCACATGAAGAGAAAAA
ATTTAGCAACATATTAGGCCAACAGAAGAAACTGAATAGTTCTCGAGTCC
GAAAAGAGAGTATAAAGTCGAAAGAGCAGCTAAAGAGGAGCTAAATGAAAACCAGAG
TACCCCCAAAAAGAAAAACAGGAGTGGCTTCAAAGCAGAAGGAGAATATACGCATT
CCAAGCAGAAGAAGAAGCTAACCTTCTCGACGTCAAAGACAATACCTAGAGCTGGAATG
CCGTCGCTTCAAGAGAAGAATGTTACTTGGCGTCAACTAGAGCAGGACCTTGTCA
GGAGGAGTTAAACAAAAGACAGACTCAGAAGGACTTAGAGCATGCCATGCTACTCCGACA
GCATGAATCTATGCAAGAACTGGAGTTCCGCCACCTCAACACAAATTAGCAAGATGCGCTG
TGAGTTGATCAGATTACAGCATCAAACACTGAGCTCACTAACCAAGCTGGAATATAAGCG
AAGAGAACGAGAACTAAGACGAAAGCATGTCATGGAAGTTCGACAACAGCCTAAGAGTT

Fig. 9P
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Title: PAK5 SCREENING
METHODS
Inventor(s): Gregory PLOWMAN
et al.
Attorney Docket No.: 034536-0688

GAAGTCTAAAGAACTCCAAATAAAAAGCAGTTCAGGATACCTGCAAAATCCAAACAG
ACAGTACAAAGCATTAGAAATCACCTGCTGGAGACTACACCAAAGAGTGAGCACAAAGC
TGTCTGAAACGGCTCAAGGAGGAACAGACCCGGAAATTAGCTATCTGGCTGAGCAGTA
TGATCACAGCATTAGAAATGCTCTCACACAAGCCCTGCGTTGGATGAAGCACAGGA
AGCAGAGTGCCAGGTTTGAAGATGCAGCTGCAGCAGGAACCTGGAGCTGTTGAATGCGTA
TCAGAGCAAAATCAAGATGCAAGCTGAGGCACAACATGATCAGAGAGCTCGCAGAGCTGA
ACAGAGGGTCTCCCTCCGGAGGGCACTCTAGAACAAAAGATTGAAGAAGAGATGTTGGC
TTTGCGAGAATGAGCGCACAGAACGAATACGAAGCCTGTTGGAACGTCAGCCAGAGAGAT
TGAAGCTTTGACTCTGAAAGCATGAGACTAGGTTTAGTAATATGGTCCTTCTAATCT
CTCCCTGAGGCATTGCCACAGCTACCCGGAGCTTCTGGTGGTACACAAACCTAC
TGGGGTCCAGGACCTCACTGGGTCACTCCATGGGTGGCCACCAAGCTGGGCCA
TCCAATGCAAGGTGGACCCCAGCCATGGGTCACTCCAGGGCCAATGCAAGGGTAC
TCGAGGTAGCAGTATGGAGTCCGCAATAGCCCCAGGCTCTGAGGCGGACAGCTCTGG
GGGACGGACGGAGCAGGGCATGAGCAGAACGACAGAGTGTCACTTCACAAATATCCAATGG
GTCACACATGTCTTACATAACTAATAATTGAGAGTGGCAATTCCGCTGGAGCTGTCT
GCCAAAAGAAACTGCCTACAGACATCATCACAGCAGCCTCCTCACTGGTACTACAGTG
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TACTAATTGGATGTCATAGTACTTGGCTGCCGGTTGTTGGAAATTTG
AAAAGTGGAGTTGATATTAAAAATAATGTGTATGTGTACATATATACACACACAT
ACACATATATTGATGTGGTAAAAAGAATTGGCTAGATAGGGATTTCTGAACACT
GCAAAATAGAACGTGAAATGGCTCAGTTACACTTGGTGTCTGTATCCTAAG
AAGTTCTGAAAGATCTAAAGCCTTTATCCATATCCAAATTCTTATGAGCCACTC
ACAGCAGGCAGCATATGTTGAAATAAGTTACTGGTACACACCTGCATTGCCTCACCA
GTGTATTTATTGTTATTAAATTGATCTGACTCTCAGCCTCATTGGACTAAAAAAGA
AAGCAGAAATCCATGAACACATTGCTCTCGGCCTTGGCTAAGATCAAGTGTAGAAAT
CCATGAACACTAAAGGACTTCATTGATTTCAGAGAGTAGAAAACAATTAGTTTC
TTTTCTGAATGCGTCATAGGCTGTGAGTGATTTGTCCATTCAATTGTGCCTCT
TTGTATTATGATAAGATGGGGTACTTAAGGAGATCACAAGTTGTGAGGATTGCTTA
ACAAACCTATGAGCCTCAATGGGAAGACCAGAAGGGTGAGAGGGCCCTGAAAGTTCA
TATGGTGGTATGTCCCGCAGCAGAGTGAGGAGATGAAGCTTACGTGTCTGACGTTG
TTGCTTACTGTGATATCTCATCCTAGCTAAGCTCTATAATGCCAAGACCCAAACAG
TACTTTACTTTGTTGTACAAAAACAAAGACATATAGCCAATACAAATCAAATGCCGGA
GGTGTGATGCCATATTGCAAATTGCCATCTATTGAAATTCTCGTCACACTACATAGA
CATATTGTTATCTCCTTGGCTATGTGATTTCTGTTACAAGTAGAAATAGCCAATT
ATTTAAATGTTAGTTGCCACAGTGAACCAAGGAGTCAGTGAGCCAATGACTTACCAAGT
GCTGACTAATCTCATCACCAGTGAGATTGCTGCATGTGCAGGTCTCTATTAA
TTGCTGTTTCGTTGCTGCAGTACTTACAAACTCTAGTTGAGACTTAGTGACCA
TTTGGCATCAAGTTAACATCACACAATAGGAAACACCACCTCCACACAAGTCTCAAGCCTCA

Fig. 9Q
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Title: PAK5 SCREENING
METHODS

Inventor(s): Gregory PLOWMAN
et al.

Attorney Docket No.: 034536-0688

GTGCTAAAGTACTACTGAAAAGGAACCTAGGAAGTTGGCCAATT

SEQ ID NO: 21 SULU3 MURINE

GCAGGATGCCATCAACTAACAGAGCAGGCAGTCTAAAGGACCTGAAATTGCAGAGCTCT
TCTTCAAAGAAGATCGGAAAAGCTCTTCACAGATCTCAGAGAAATCGGCCATGGGAGCT
TTGGAGCAGTATATTTCACGAGATGTGCGTACTAATGAAGTGGTGGCCATCAAGAAAA
TGTCTTATAGTGGAAAGCAGTCTACTGAGAAATGGCAGGATATTATTAAGGAAGTCAAGT
TTCTACAAAGAATAAAACATCCCAACAGTATAGAATACAAAGGCTGCTATTACGTGAAC
ACACAGCATGGCTTGTAAATGGAATATTGTTAGGATCTGCTCAGATTATTAGAAGTTC
ATAAAAAGCCATTACAAGAAGTGGAAATAGCAGCAATTACACATGGTGTCTCCAGGGAC
TAGCTTATTACATTCTCATACCATGATCCATAGAGATATCAAAGCAGGAAATATCCTTC
TGACAGAACCAAGGCCAGTGAAACTTGCTGACTTTGGATCTGCTTCATGGCTTCCCTG
CCAATTCTTTGTGGGAACACCATAATTGGATGGCCCCAGAAGTAATTTAGCCATGGATG
AAGGACAGTATGATGGCAAAGTTGATGTATGGTCTCTTGAATAACGTGTATTGAATTAG
CCGAGAGGAAGCCTCTTATTAAATATGAATGCAATGAGTGCCTTATATCACATAGCCC
AAAATGAATCCCTACACTACAATCTAATATGAATGATTCTGCCTCCAGAAAATCCCTC
AAGATGCCCTACATCAGAGGAACCTTAAAGCACATGTTGTTCTCGAGAGCGCCCTG
AAACAGTGTAAATAGATCTTATTCAAAGGACAAAGGATGCAGTAAGAGAGCTGGACAATC
TGCAGTATCGAAAGATGAAGAAACTCCTTCCAGGAGGCACATAATGGCCAGCGGTAG
AAGCACAGGAAGAAGAGGAGGAGCAAGATCATGGTGTGGCGAACAGGAACAGTGAATA
GTGTTGGAAGCAATCAGTCTATCCCTAGTATGTCTATCAGTGCAGCAGTCAAAGCAGCA
GTGTTAATAGTCTTCCAGATGCATCAGATGACAAGAGTGAGCTAGACATGATGGAGGGAG
ACCATACAGTGTCTAACAGTTGTCATCCACTAAACCTGAGGGAGGAAATTACCA
AGGAAGAAGGAGATCCTAGAACACAAGAGCATCAGACCCACAGTCTCCCTCAGGTGTCTC
GTCACAAGTCACATTATGTAATAGAGAACACTTGCAACCATACTGAAACAGCATCACTGG
TTACAAGACAGATGCAAGAACATGAGCAGGACTCTGAACCTAGAGAACAGATGTCTGGTT
ATAAGCGGATGAGGCACAGCATCAAAGCAGCTGATGACGCTGGAAAATAACTGAAGG
CAGAGATGGACGAACATCGGCTCAGATTAGACAAAGATCTGAAACTCAGCGTAACAATT
TCGCTGCAGAAATGGAGAAACTTATTAAGAAACACCAAGCTGCTATGGAAAAAGAGGCTA
AAGTGATGGCCAATGAGGAGAAAAAATTCCAGCAACACATTAGGCTAACAGAAAAAG
AACTGAATAGCTTTGGAGTCTCAAAAAGAGAATATAACTCGCAAAGAGCAGCTTA
AGGAGGAGCTGAATGAAAACCAGAGCACACCTAAAAAGAAAAGCAGGAATGGCTTCAA
AGCAGAAGGAGAATATACAGCATTTCAGGCAGAAGAAGAAGCTAATCTTCTCGACGTC
AAAGGCAGTATCTAGAGCTAGAATGTCGTGCTTCAAAAGAAGAATGTTACTTGGCGAC
ATAACTTGGAACAGGACCTTGTCAAGGGAGGTTAACAAAGGAGACTCAAAGGACT
TGGAACATGCAATGCTATTGCGACAGCATGAATCAATGCAAGAACTGGAGTTCGCCATC
TCAACACTATTAGAACAGATGCGCTGTGAGTTGATCAGACTGCAGCATCAAAGTCA
CTAACACCAGCTAGAGTACAATAAGAGAACGGAACTGAGGCAGAACATGTCAATTGG

Fig. 9R
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Title: PAK5 SCREENING
METHODS

Inventor(s): Gregory PLOWMAN
et al.

Attorney Docket No.: 034536-0688

AAGTCGACAACACCTAACAGAGTCTGAAGTCTAAAGAACTCCAAATAAAAAGCAGTTCA
AGGATACCTGAAAATTCAAACCAAGACAGTACAAAGCATTAAGGAATCACCTACTGGAGA
CTACACCAAAGAATGAGCACAAAGCAATC

SEQ ID NO: 25 GEK2 HUMAN.

CGAAGCCACAGCCCGAGCCCGAGCCCGAGCCGCCACCGCGCCCCGGCCAT
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CGAATATGAGCACGTCCGCCGACCTGGACCCCAACGAGGTGTGGAGATCGTGGCGA
GCTGGCGACGGCGCCCTCGGCAAGGTTACAAGGCCAAGAATAAGGAGACGGTGCTT
GGCTGCCAAAGTCATTGAAACCAAGAGTGAGGAGGAGCTGGAGGACTACATCGGGA
GATTGAGATCCTGCCACCTGCGACCACCCCTACATTGTGAAGCTCCTGGGAGCCTACTA
TCACGACGGGAAGCTGTGGATCATGATTGAGTTCTGTCCAGGGGAGCCGTGGACGCCAT
CATGCTGGAGCTGGACAGAGGCCCTACGGAGCCCAAGATAACAGGTGGTTGCCGCCAGAT
GCTAGAAGCCCTCAACTTCCCTGCACAGCAAGAGGATCATCCACCGAGATCTGAAAGCTGG
AACGTGCTGATGACCCCTCGAGGGAGACATCAGGCTGGCTGACTTTGGTGTCTGCCAA
GAATCTGAAGACTCTACAGAAACGAGATTCTTACGGCACGCCCTACTGGATGGCCCC
CGAGGTGGTCATGTGTGAGACCATGAAAGACACGCCCTACGACTACAAAGCCGACATCTG
GTCCCTGGGCATCACGCTGATTGAGATGGCCAGATCGAGCCGCCACACCACGAGCTCAA
CCCCATGCCGGTCTGCTAAAGATGCCAAGTCGGACCCCTCCACGCTGCTCACGCCCTC
CAAGTGGTCTGTAGAGTTCCGTGACTTCTGAAGATAGCCCTGGATAAGAACCCAGAAAC
CCGACCCAGTGCCCGCAGCTGCTGGAGCATCCCTCGTCAGCAGCATCACCAGTAACAA
GGCTCTGCCGGAGCTGGTGGCTGAGGCCAAGGCCAGGTGATGGAAGAGATCGAAGACGG
CCGGGATGAGGGGAAGAGGAGGACGCCGTGGATGCCCTCCACCCCTGGAGAACCATAC
TCAGAACTCCTCTGAGGTGAGTCCGCCAAGCCTCAATGCTGACAAGCCTCTGAGGGAGTC
ACCTTCCACCCCGCTGGCACCCAGCCAGTCTCAGGACAGTGTGAATGAGCCCTGCAGCCA
GCCCTCTGGGACAGATCCCTCAAACCAACCCAGTCCCCAGTCGTGGCCCTGGAAATGA
GAACGGCCTGGCAGTGCCTGTGCCCTGCCAAGTCCGACCCGTGTCATGGATGCCAG
AATTCAAGGTAGCCCAGGAGAAGCAAGTTGCTGAGCAGGGTGGGACCTCAGCCCAGCAGC
CAACAGATCTCAAAGGCCAGCCAGAGCCGGCCAAACAGCAGGCCCTGGAGAACCTGGG
TGGGGAGAAGCTGGCAATGGCAGCCTGGAGCCACCTGCCAGGCAGCTCCAGGGCCTTC
CAAGAGGGACTCGGACTGCACTGCAGCAGCCTCTGACGAGCATGGACTATGGTACCAA
TCTCTCCACTGACCTGTCGCTGAACAAAGAGATGGGCTCTGTCCATCAAGGACCCGAA
ACTGTACAAAAAAACCTCAAGCGGACACGCCAAATTGTGGATGGTGTGGAGGTGAG
CATCACCACCTCAAAGATCATCAGCGAAGATGAGAAGAAGGATGAGGAGATGAGATTCT
CAGGCCAGGAACCTCGAGAGCTCGGCTGCTCCAGAAAGAAGAGCATCGGAACCAAGAC
CCAGCTGAGTAACAAGCATGAGCTGCACTGGAGCAAATGCATAAACGTTGAACAGGA
AATCAACGCCAAGAAGAAGTTCTTGACACGGAATTAGAGAACCTGGAGCGTCAGAAAA
GCAGCAAGTGGAGAAGATGGAGCAAGACCATGCCGTGCGCCGGGAGGAGGCCAGGCG

Fig. 9S
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Inventor(s): Gregory PLOWMAN
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Attorney Docket No.: 034536-0688

GATCCGCCTGGAGCAGGATCGGGACTACACCAGGTTCAAGAGCAGCTCAAACGTGAA
GAAAGAGGTGAAGAACGAGGTGGAGAAGCTCCCCGACAGCAGCGGAAGGAAAGCATGAA
GCAGAAGATGGAGGAGCACACGCAGAAAAAGCAGCTTCTTGACCGGGACTTGTAGCCAA
GCAGAAGGAGGACCTGGAGCTGGCATGAAGAGGCTACCCACCGACAACAGGCAGGAGAT
CTGTACAAGGAGCGCGAGTGCCTCATGAAGAAGCAGGAGCTCTCGAGACCGGGAGC
AGCCCTGTGGAGATGGAAGAGCACCAGCTGCAGGAGAGGACCAAGCTGGTGAAGCAGCA
GCTCAAAGACCAGTACTTCCCTCAGCGGACGAGCTGCTGCGCAAGCATGAGAAGGAGCG
GGAGCAGATGCAGCGCTACAACCAGCGCATGATAGAGCAGCTGAAGGTGCGGCAGCAACA
GGAAAAGGCAGCTGCCAAGATCCAGAGGAGTGAGGGCAAGACGCGCATGCCATGTA
CAAGAAGAGCCTCCACATCAACGGGGGGCAGCGCAGCTGAGCAGCGTGAGAAGATCAA
GCAGTTCTCCCAGCAGGAGGAGAAGAGGCAGAAGTCGGAGCGGCTGCAGCAACAGCAGAA
ACACGAGAACCCAGATGCGGGACATGCTGGCGAGTGCAGAGCAACATGAGCGAGCTGCA
GCAGCTGCAGAATGAAAAGTGCCACCTCCTGGTAGAGCACGAAACCCAGAAACTGAAGGC
CCTGGATGAGAGGCCATAACCAGAACCTGAAGGAAT

SEQ ID NO: 27 PAK4 HUMAN

CGTTCTGGCTTCCCGCTCCGCAGGCCTGCGGAGGACTGGCCAGCAAGGTCCCAGGTC
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GCGGAAGGCAGCCGGAGGCACCATGTTCCGCAAGAAAAAGAAGAAACGCCCTGAGATCTC
AGCGCCACAGAACTCCAGCACCGTGTCCACACCTCCTGACCCCCAAAGAAGGCAAGTT
TGTGGCCTCCCCCACAATGGCAGAACATCCTGGACACACTGCGGCCAGGCCGT
GGTGGACCTCGCAATCACACGGGTGCAGCTCCAGCCATGAAGACAGTGGTGCAGGG
CAGCGCGATGCCGTGGATGGCTACATCTCGGGCTGCTAACGACATCCAGAAGTTGTC
AGTCATCAGCTCAACACCCCTCGTGGCCGAGCCCCACCGCCGGCGGGCACAGTC
CCTGGGCTGCTGGGAGTGAGCACTGGCCACCGACCCAGACATGTACCTCAGAGCCC
CCAGTCTGAGCGCACTGACCCCCACGGCCTTACCTCAGCTGCAACGGGGCACACCAGC
AGGCCACAAGCAGATGCCGTGGCCGAGCCACAGAGCCCACGGTCTGCCAATGGCT
GGCTGCAAAGGCACAGTCCCTGGGCCCCGCCAGTTCAAGGGTGCCTCGAGCGCTGTCT
GCAGCTGGTGCCTGCCAGAGCTCCCCACCGAGGAGCCTCGCCCCACGGGACCAA
TAGGCATGGAATGAAGGCTGCCAAGCATGGCTCTGAGGAGGCCACAGTCTGCC
GGTGGCTAGCCACAGGCAGGCCAGGTGGGAAGGCAGCCCTAGCCCTAACGACCCGG
GAGCAGCCTGAAGCGCAGGCTATTCCAAGCATGTTCTGTCCTGAGCCACAGCCC
TCCAAGCAGCAGCAAGCCAGGCCCTCCACCAAGAGCAAGCCAACTCCTTTCCGACC
GCCGCAGAAAGACAACCCCCCAAGCCTGGTGGCCAAGGCCAGTCCTGCCCTCGGACCA
GCCGGTGGGACCTCAGCCCTGACCACTCGGATAACAGCAAGCCCCAGAAGTCCT
CCGCACAGCCCCGGCCACAGGCCAGCTCCAGGCCGGTCTCCCCAGCGGGATCCCCCG
CACCTGGCACGCCAGATCAGCACCAGCAACCTGTACCTGCCAGGACCCACGGTGC
CAAGGGTGCCTGGCTGGTAGGGACACAGGTGTTGACACATGAGCAGTTCAAGGCTGC

Fig. 9T
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METHODS
Inventor(s): Gregory PLOWMAN
et al.
Attorney Docket No.: 034536-0688

GCTCAGGATGGTGGGACCAAGGGTACCCCCGGCTGCTGGACAGCTACGTGAAGAT
TGGCGAGGGCTCCACCGGCATCGTCTGCTTGGCCCGGGAGAAGAAGCACTCGGGCCGCCAGGT
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GGTATCATGCGGACTACCAGCACTCAACGTGGTGGAGATGTACAAGAGCTACCTGGT
GGCGAGGGAGCTGTGGGTGCTCATGGAGTTCTGCAGGGAGGAGCCCTCACAGACATCGT
CTCCCAAGTCAGGCTGAATGAGGAGCAGATTGCCACTGTGTGAGGCTGTGCTGCAGGC
CCTGGCCTACCTGCATGCTCAGGGTGTATCCACCGGGACATCAAGAGTGAUTCCATCCT
GCTGACCCCTCGATGGCAGGGTGAAGCTCTCGGACTTCGGATTCTGTGCTCAGATCAGCAA
AGACGTCCCTAAGAGGAAGTCCCTGGTGGAACCCCTACTGGATGGCTCTGAAGTGAT
CTCCAGGTCTTGTATGCCACTGAGGTGGATATCTGGTCTTGGCATCATGGTATTGA
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CCGGGACAGCCCCCACCAGCTGAAAAACTCTCACAGGTCTCCCCAGTGCTGCAGA
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CTACCGAAAGCAGACCTCCACCTGCTGAGCCCACCCAGTATGCCCTGCCACCTACGCC
ACAGGCAGGGCACACTGGGCAGCCAGCCTGCCGGCAGGACTTGCCCTGCCTCTCA
GTATTCTCTCAAAGATTGAAATGTGAAGCCCCAGCCCCACCCCTGCTGCCCTCAGCCTAC
TGGGCCAGGCCGGACCTGCCCTCAGTGTCTCCCTCCGAGTCCCCAGATGGAGACC
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CAGCGTTCTGGCCTCTGCAGCCAACACAGTAGAAAAGGCTGCTGTGGTTTTAAAGGC
AGTTGTCCACTAGTGTCTAGGCCACTGCAGAGGGCAGACTGCTGGTCTCCACAGATACC
TGCTGTTCTCAGCTCAGCTCAAACCTCGAGTCTCGAGAGGGCACGGGGTGGTTTA
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CAGCCCCCTCCCCGCCAAGAACATGTGAATGGCCTGCTCCAGGCCATGGCTGGGGCAGGG
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TGT
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CCTGAAGGGACCTGCTTCTGGCCTGGCTTCCACCTCTCCACTCCTGTGTCTACCTGGC
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TCCTGTACTGTGCATCGTAGGGCCAGAGACAGGAATGTAAGGATTGGCAACTGTGTTAC
CTTCAAGTTATCTCAATAACCAAGGTATCAGGGACCCATTGTTCTTCAAGACCTA
TCTGGGAGAGAACCGAACCTCCGGTTCCATCATGTCAAGGTACAGGCATCCAT
GTGTGCAAACCATCTGCCCTAGCTGCCCTCACAGACTGCTGTCTCCCTGTCTCGGC
CCTGCCCACTTCAGGGCTGCTGTGAGATGGAATTCCAGGAAAGAACATTCAAGGTGCTGG
ACCCCTTCTATCTAGATAATTTAGATTCTCTGCTCCCTAGTGACCTACCTGGGG
CAAAGAAATTGCAAGGACTTTTTTAAGGGTCAGAGTTCAAAACAAAGCATCTTCC
CTAGAAATTGGTGAATTGTTGCACTTGTGCCTGTTAAATTAAATTGAGTGTCAA

Fig. 9U

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Title: PAK5 SCREENING
METHODS

Inventor(s): Gregory PLOWMAN
et al.

Attorney Docket No.: 034536-0688

AGCC

SEQ ID NO: 28 PAK5 HUMAN

GGCCAGTGGGGCGAAACTGGCAGCTGGCCGCCCTTAACACCTACCCGAGGGCTGACAC
GGACCACCCATCCCGGGTGCCCAGGGGGAGCCTCATGACGTGGCCCTAACGGGCCATC
AGCGGGGGGCCTGGCATCCCCAGTCCTCCTCCTCCTCCGGCTCCACCCGAGC
CCGAGGTGCCCTGGAGTGCTGGACCCCAGCCTCAGAGCCCCAGCTGGCCCC
TCCAGCCTGCACCCCCGCCGCCCTGCTGTTCTGGCCCCCTGGCCCCGCTCACCA
GCGGGAGCCACAGCGAGTATCCCAGTCAGCAGTTCCGGCTGCCCTGCAGCTGGTGG
CCCAGGCAGCCCCGCTTACCTGGACAACTTCATCAAGATTGGCGAGGGCTCACGG
CATCGTGTGCATGCCACCGTGCAGCTCGGGCAAGCTGGTGGCGTCAAGAAGATGGA
CCTGCAGCAGCAGAGGCGGAGCTGCTCTTCAACGAGGTGTAATCATGAGGGACTA
CCAGCACGAGAATGTGGTGGAGATGTACAACAGCTACCTGGTGGGGACGAGCTGGT
GGTATGGAGTTCTGGAAGGAGGCGCCCTACCGACATCGTACCCACACCAGGATGAA
CGAGGAGCAGATCGCGGCCGTGCGCTTGAGTCAGTGCTGCAGGCCCTGTCGGTGTCCACGC
CCAGGGCGTCACTCACCAGGGACATCAAGAGCGACTCGATCCTGCTGACCCATGATGGCAG
GGTGAAGCTGTCAGACTTGGTTCTGCACGCCCTACTGGATGGCCCCAGAGCTCATCTCCGCCTCCACGG
GTCGCTGGTCGGCACGCCCTACTGGATGGCCCCAGAGCTCATCTCCGCCTCCACGG
GCCAGAGGTAGACATCTGGCGCTGGGATAATGGTGATTGAGATGGTGGACGGAGAGCC
CCCCTACTTCAACGAGCCACCCCTCAAAGCCATGAAGATGATTGGACAAACCTGCCACC
CCGACTGAAGAACCTGCACAAAGGTGTCGCCATCCCTGAAGGGCTTCTGGACCGCCTGCT
GGTGCAGACCCCTGCCAGCGGGCACGGCAGCCAGCTGCTGAAGCACCCATTCTGGC
CAAGGCAGGGCGCCTGCCAGCATCGTCCCCCATGCCAGAACCGCACAGATGAGG
CCCAGCGCCCTCCCCCAACCAAAGAGCCCCCCCAGGTACCCCCGCCACTGAGGCC
AGTAGGGGGCCAGGCCTCCACTCCTCCCAGCCCAGGGAGATGCTCCGCGTGGCACCA
TCCTTGCTGGGGTAGATGAGACCCCTACTACTGAACCTCAGTTGATCTCGTACTTT
AGAAAAACACAGGGACTCGTGGAGCAAGCGAGGCTCCAGGACCCCTCTGGAC
AGGCCCTCCCCATGTTCTGTCTCCAGGAAGGGCAGCGGCCCTCCACTCACTGGAAG
TCTGCAGTGGGGTCGCTGGGGTAGAGAACACTAAGAGGTGAACATGTATGAGTGT
TGCACGCGTGTGAGTGTGCATGTGTGTGTGCAAAGGTCCAGCCACCCGTCTCCA
GCCCGCAAGGGGTGTCTGGCGCTTGCGCTGACACCCAGCCCCCTCTCCCCGTGAGCCATT
GTGGGGTCGATCATGAATGTCCGAAGAGTGGCTTTCCCTAGCCCTGCGCCCCCTT
CTGTGGCTGGATGGGAGACAGGTCAAGGGCCCCCAGCCCTCTCCAGCCCCGTGAGCAAAT
GACTACTGCACCTGGACAGCCTCTTTCTAGAAGTCTATTATATTGTCTTATA
ACACTCTAGCCCCCTGCCCTTATTGGGGAGACAGATGGTCCCTGCTGCGGGGTGGCCCTG
GCAGAACCAACTGCCTGAAGAACCAAGGTTCTGCCGGTCAGCGCAGCCCCAGCCCC
CCCCCTGCCTCGAGTTAGTTACAATTAAACATTGTCTTGTGTTGTGAAAAAAA
AAAAAAA

Fig. 9V
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Title: PAK5 SCREENING
METHODS

Inventor(s): Gregory PLOWMAN
et al.

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Title: PAK5 SCREENING
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et al.

Attorney Docket No.: 034536-0688

>STLK5_h

MSSFLPEGGCYELLTVIGKGFEDLMTVNRLARYKPTGEYYVTVRINLEACSNEMVTFLOQGELHVSKLFNHPNIVPYRATFI
ADNELWVWVTSFMAKGSAKDLCITHFMDGMNELAIAYILQGVLKALDYIHHMGYVHRSVKASHILISVDGKVYLSGLRSNL
SMISHGQRQRVWVHDPEPKSVKVLPWLSPEVLQQLQGYDAKSDIYSGITACELANGHVPFKDMPATQMLLEKLNGTVP
LDITSTIPAAELTMSPSPRSVANSGLSDSITTPRPSNGDSPSHPYHRTFSPHFHHFVEQCLQRNPDARPSASTLLNHSF
FKQIKRRASEALPELLRPVTPITNFEGSQSQDHSGIFGLVTNLELEVDDWEF

>STLK6_h

MSLLDCFCFTSRTQVESLRPEKQSETSIHQYLVDDEPTLSWSRPSTRASEVLCSTNVSHYELQVEIGRGFDNLTSVHLARHT
PTGTLVTIKITNLENCEERLKAQKAVILSHFFRHPNITTYWTVFTVGSWLWVISPFMAYGSASQLRLRTYFPEGMSETL
INNILFGAVRGFLNYLHQNGCIHRSIKA SHI LISGDGLVTL SGLSHLHSLVKHGQRHRAVYDFFPQFSTSVPWLSPELIRQ
50 DLHGYNWKSDIYSGVITACELASGQVPFQDMHRTQMLLQKLKGPPYSPLDISIFPQSESRMKNSQSGVDSGIGESVLS
GHTVNSDRLHTPSSKTFSPAFFSLLQQLCLQQDPEKRPSSASSLLSHVFFKQMKEEQDSIQLP
76 WTEPECDFPDEKDSDYWEF

>STLK7_h

NRDDYELQEVIIGSGATAVVQAAycopKEKVAIKRINLEKQTSMDELLKEIQAMSQCHHPNIVSYTTSFVVKDELWLV
KL SGGSVLDIIKHHIVAKGEHK\$

>ZC4_h

MAGPGGGWRDREVTDLGHLPDPTGIFSLDKTIGLGTYGRIVLGLHEKTGAFTAVKVMMNARKDEEDLRTELNLLRKYSFHK
NIVSFYGAFFKLSPPGQRHQLWMVVMELCAAGSVTDDVVRMTSNQSLKEDDWIAYICREILQGLAHLHAHRRVIHRODIKGQNV
LTHNAEVKLVDFGVSAQVSRTNGRRNSFIGTPYWWMAPEVIDCDEDPRRSYDYSRSDVWWSVGITAIEMAEGAPPLCNLQPLE
ALFVILRESAPTVKSSGWSRKFHNFMEKCTIKNFLFRPTSANMLQHPFVURDIKNERHVVESLTRHLTGIIKKRQKKEQAR
EKSKSVSTLRQALAKRSLSPKRFRAKSSWRPEKLELSDEARRQRQRWEDIFNQHEEELRQVDKDKEDESSDNDDEVFHS

Fig. 10A

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IQAEVQIEPLKPYISNPKKIEVQERSPSVPPNNQDHAHHVFKSSVPQRSLLEQAQKPIDIRQRSSQNRQNWLAASGDSKH
KILAGKTQSYCLTIYISEVKKEEFQEGMNQKCGAQVGLGPEGHCIWQLGESSSEESPVTGRRSQSSPPYSTIDQKL
DIHVPDGFVKVGKISPPVYLTNEWVGYNALSEIFRNDWLTPAPVIQPPPEEDGDDYVÉLYDASADTDGDDDESNDTFEDTYD
HANGNDDDLDNQVQDQANDVCKDHDDNNKFVDDVNNNYEAPSCPRASYGRDGSCKQDGSRGKEEAYRGYGSHTANRS
HGGSAASEDNAAIGDQEHAANIGSERGSEGDGGKGVVRTEESGALGLNGEENCSETDGPGLKRPASQDFEYLQEEPG
GGNEASNAIDSQAAPSAPDHESDNNDISSESSTQSDFSANHSSPSKGSMSADANFASAILYAGFVEVPEESPQKQPSEVNV
NPLYVSPACKPLIHMYEKEFTSEICCGSLWGVNLLLGTRSNLYLMDRSGKADITKLIRRPFRRQIQVLEPLNLLITISG
HKNRLRVYHLTWLRNKKILNNNDPESKRRQEEMLKTEACKAIDKLTGCEHFSQLQHEETTYIAIALKSSIHYAWAPKSF
ESTAIKVFPTLDHKPVTVDLAIIGSEKRLKIFFSSADGYHLIDAESEVMSDVTLPKNPLEIIIPQNIIILPDCLGIGMM
FNAEALSVEANEQLFKKKILEMWKDISSIAFFECTQRTTGWGQKAIEVRSLSQSRVLESELKRRSIKKLRFLLCTRGDKLFF
STLRNHHHSRVEYFMTLKGKLEELQSNYDV

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>PAK5_h

MFGKRRKKRVEISAPSNEHRVHTGFDQHEQKFTGLPRTQWQSLIEESARRPKPLVDPACITSIQPGAPKTI
ALTLLDEFENMSVTRSNSLRRDSPPPQARQENGMPPEPATTARGPGKAGSRGRFAGHSEAGGGGSDRRRAGPEKRP
KSSREGSGGPQESSRDKRPLSGPDVGTPQPGAGLASAKLAAGRPFNTYPRADTDHPSRGAQGEPHDVAPNGPSAGGLAIP
QSSSSSRPPTARGAPS PGV L GPHASEPQLAPPACTPAAPAVPGPPGPRSPQREPQRVSHEQFRAALQLVVDPGDPRSY
LDNFIKIGEGSTGIVCIATVRSSGKLVAVKKMDLRKQQRRELLFNEVIMRDYQHENVVEMYNSYLVGDELWVVMEFILEG
GALT DIV THTRMNEEQIAAVCLAVLQALSVLHAQGVIVHDIKSDSILLTHDGRVKLSDFGFCAQVSKEVPRRKSLVGT
WMAPELISRLP YGPEVDIWSLGLIMVIEMVUDGEPPYFNEPPLKAMKMI RDNLPPRLKLNHLKVSPSLKGFLDRLLVRDPAQR
ATAAEELLKHPFLAKAGPPASIVPLMRQNRTR

>GEK2_h

MAFANFRRIILRLSTFEKRSREYEHYVRDLPNEVWEIVGELGDGAFGKVYKAKNKETGALA
EIEILATCDHPYIVKLLGAYYHDGKLWIMIEFCPGGAVIDAIMLELDRGLET
PQIQWVCRQMLEALNFHHSKRITIHRDLKA

Fig. 10B

GNVLMTLEGDIRLADFGVSAKNLKTLQKRDSLFIGTPYMAPEVMCETMKDTPYDVKADIWSLGITLIEMAQIEPPHHEL
NPMRVLLKIAKSDPPTLTPSKWSVEFRDFLKIALDKNPETRPSAAQLLLEHPFVSSITSNKALRELVAEAKAEVMEETIED
GRDEGEEDAVDAASTLENNHTQNSSEVSPPSLNADKPLEESPSTPLAPSQSQDSVNEPCSGDRSLQTTSPPVAPGN
ENGLAVPVPLRKSRPVSMNDARIQVAQEKGVAEQGGDLSPAANRSQKASQSRPNSSALETLGGEKLANGSLEPPAQAAAPGP
SKRDSDCSSLCTSESMDYGTNLSTDLSLNKEMGSLSIKDPKLYKKTLKRTRKFVVDGVEVSITTSKIISEDEKKDEEMRF
LRRQELRELRLQKEEHRNQTQLSNKHELQLEQMHKRFEEQEIINAKKKFFDTELENLERQQKQVEKMEQDHAVRREEAR
RIRLEQDRDYTRFQEQLKLMKKEVKNEVEKLPRQRKESMKQKMEETTQKKQLLDRDFVAKQKEDLELAMKRLTTDNRRE
ICDKERECLMKKQELLRDRREALWEMEEHQLQERHQLVKKQLDQYFLQRHELLRKHEKEREQMQRYNQRMIEQLKVRQQ
QEKARLPKIQRSSEGKTRMAMYKSLHINGGSAAEQREKIKQFSQQEKRQKSERLQQQQKHENQMRDMLAQCESNMSEL
QQLQNEKCHLLVEHETQKLKALDESHNQNLKEWRDKLPRKKALEEDLNQKKREQEMFFKLSEEAECPNPSTPSKAAKFF
PYSSGDA\$

Fig. 10C

METHODS

Inventor(s): Gregory PLOWMAN

et al.

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Title: PAK5 SCREENING METHODS

Inventor(s): Gregory PLOWMAN

Attorney Docket No.: 034536-0688
et al.

ACCTAAGTCTTCCACGGTTATGTTGCTCATTCCTGCTTCCACAAAGAATCCATCTTACGGCTCCAGCTG
CCCTGTTGCTTCTCAAGGGCATCAGTGTCTTGCCTAGCTTGAAGCTTATGCTGTTAGTTAGCTTGGTGT
CAGAACAAATTCTAGAGAGGCTG

>STLK6-h

59/76 AAGGAAGATAAAAAGCCCTTTGGATAAGTGGATTTTGTTCACTTCTGTGTGAACTAAAGTGAATTCAATGTCT
CTTGGATTGTTCTGCACTTCAAGAACACAAGTTGAATCACTCAGACCTGAAACCTGAAACCGTATCCATCA
ATACCTGGTGTGATGAGCCAAACCCCTTCTGGTCACGTCCATCCACTAGAGCCAGTCACTAGGACTATGTTCA
CTCACTATGAGCTCCAGTAAAGGATTGACAACCTGACTTGAAGGATAAGGAATAGGAAGGATTGACAACCTGACT
GGAACACTGGTAACATAAAATTACAAATCTGGAAAACCTGCAATGAAAGAACGGCTGAAAGCTTACAGAAAG
CTTATCCACTTTTCCGGCATCCCAATTAAACCTTGGACAGTCTTCACTGTTGGCAGCTGGCTTGGTTTATT
CTCCATTATGGCTTATGGCTTCAAGAAGTCAACTCTGGACCTTATGGAACTTCACTGCTGTATTCAAGGAGTATT
ACATTCTCTTGGAGGGTGTAGAGGGTTGAACTATCTGCACCAAAATGGCTGACTATGGCTTAAAGCCAG
TATCCTCATTTCTGGTGTGATGGCCTAGTGACCCCTCTGGCTTCCATCTGGCATAGTTGGCTGAGTCCAGAA
ATAGGGCTGTGTATGATTTCACAGTTCAGCACATCAGTGCAAGCCGTGGCTGAGTCCAGAAACTACTGAG
CATGGGATAATGTGAAGTCAGATATTACAGTGTGGGATTACAGCATGTGAATTAGCCAGTGGCAGGTG
GGACATGCACTAGATGCTGTACAGAAACTGAAAGGTCTCTTATAGCCATTGGATATCAGTATTTCCTCT
ATCAGAAATCCAGAAATGAAAATTCCAGTCAGGTAGCTAGGTGATTGAGAAAGTGTGCTCTGAACT
CACACAGTAATAGTGGCCGATTACACACCATCCAAACACTTCTGGCTTACAGCTCTG
TTGGCAACAGATCTGGAAAGGCCATCAGCAAGCAGTTTATGTCCTCATGGTCTTCAACAGATGAAAGAAA
GCCAGGATTCAATACTTCACTGGTTTACAGCTGGCTTACAGCTCTG
GAGCCAGAAATGTGATTTCCTGATGAAAAAGACTCATACTGGAAATTCTAGGGCTGCAAAATCATT
CTTGACACTTCTCTGCTGCTTCTGTTTCTGTTAGGTACAAATCCAGAATTACTGGAAATTACAGTGG
GCACTGGAGAACTATATTAAACCACTGTTCAAGGGCACCAGTTGTAGTCCCTGTGCAAGAGTACT
ATGACAGAAACATCAGAAATTACTATCTAGTGTCACTTCTAAGCTGIGACTAACCTT

Fig. 1B

TTTATCTCTCAATAATTGAGCCAGTTAATTGAGCTTCAAGTATTTCAGTATTTCAGTGGGAAATGGGCCCTCAGAGGAC
AGTGCTTCCAAAGTACATCTCTCCAGATTCTGGCTTAAATGAGCTATTGGTAAACAAACAGGCTAGTTTATCTT
ACATCAGACCCCTTTCTGGTAGAGGGAAATGTTGGCTTCCCTTCTGTAAATACCTTATGTTAAACACCTAAC
TGAGCCCTCACTCACATTAAATGATTCACTGAAATATAAGAAATTTGTAATTGGCTTTTAAAGGGGCTAA
AGTAACACCTTCTACTTATGTAATTAGTCAATTACGGCACCCCCGGTAGCTCAATAAGGATTACTGAATT
G

>STLK7_h

TCAACAGGGACGATTACGAGCTGGAGGTGATGGAGCAACTGCTGTAGTCCAAAGCAGCTTATTGTGCCCT
AAAAAGGAGAAAGTGGCAATCAACGGATAAACTGGTAAACTAGCATGGTAAACTGGCTTCTGAAAGAAATCTCA
AGCCATGAGTCATGCCATCTTAATATTGTATCTTACTACACATCTTGTGGTAAGGATGAGCTGTGCTTGTCA
TGAAAGCTGCTAAGTGGGGTTCTGTTCTGGATATTATAAGCACATTGGCAAAAGGGAAACACAAAAAGT

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>LC4_h

ATGGCGGACCTGGGGCTGGAGGACAGGGTCAAGGATCTGGGCACACCTGGGATCTGGG
AGATAAAACCATGGCCCTTGTACTTATGGCAAAATCTATGGGACTTCTGAGAAGACTGGTGCATTACAGCTGTTA
AAAGTGTGAAACCGCTCGTAAGGATGAGGAAGAGGATCTAGGACTCTGAACCTCTTCTGAGAAGGTACTCTTCCACAAA
AACATTGGTGTCCCTCTATGGACATTGGCATTGGTCAAGGCTGAGTGGTCAAGGGCACCACCTTGGATGGTGTGGAGTT
ATGGCAGGGTTGGTCACTGATGTAGTGGAAATGACCAAGTAATCAGAGTTAAAGAAGATTGGATTGCTTATCT
GCCGAGAAATGCCCTCAGGGCTTAGCTCACCTCACGGCACACGGGACATTCAAGGGACATCAAGGGAAATGTGCTG
CTGACTCATATACTGCTGAAGTAAACTGGTTGATTTGGAGTGGCTGGAGTGAAGGAAACTAATGGAAAGGAATAG
TTTCATTGGGACACCATCTGGGATGGCAGCTGAGGTGACTGTGATGAGGCTCTCTGTAACCTTCAACCCCTGGAA
GTGATGTTGGTCTGTGGAAATTACTGCCATTGAAATGGCTGAAATGGGATGGTCCCTGTAAGTGGTCCACAAATTTCATGG
GCTCTCTCGTTATTTGGGGAAATCTGCTCCACAGTCAAATCCAGGCTTCAACGGGATGGTCCACAAATTTCATGG
AAAGTGTACGGATAAAAATTCTCTGCAAAACATGCTACTCTGTTCTGGGATTTGGGATATAAAA

Fig. 11C

Title: PAK5 SCREENING

METHODS

Inventor(s): Gregory PLOWMAN

Attorney Docket No : 034536-0688
et al.

Fig. 11

Title: PAK5 SCREENING

Inventor(s): Gregory PLOWMAN
MELINDA

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CATAAGAACAGACTTCCGGGTATCATCTGACCTGGTTGAGGAACAAAGATTGATAATGATTTGAATAATGATCCAGAAAGTAAAGAAG
GCAAGAAAGAAATGCTGAAGAACAGAGGAACAGAGCTGCAAAGCTTAAAGTATACTGAAACACTTCAAGTGTGCTCTCC
AACATGAAGAACACATATATTGCAATTGCTTTGAATCATCAATTCAACCTTCAACATTTGATCAACACTTCAAGTATAAGCCAGTGA
GAAAGCACTGCTTAAAGTATTCAACACTTCAAGTGGATATCACCTCATCGATGAGAATCTGAGGTTATGCTGATGACCCCTGC
ACTAAAGATTCTTCAGCTAGCAGGAGATGGATTTGAAATCATTTACCTGATTTACATCAACAGAAATATCATCATTACCA
CAAAGAATCCCCCTGGAAATCATTTACCAAGAATATCATCATTACCAACACTTCAAGAAGTGAACACTTCAAGAAGT
TTCAATGCTGAAGCCCTCTCTGTGGAAAGCAATGAAACACTTCAAGAAGTCTTGAATGTTGAAATGTTGAAATGTC
TTCTATAGCTTTGAATGTAACACGGAACACAGGAACAGGATGGGCCAAAGGCCATTGAAAGTGGGCTCTTTGCAATCAGGG
TTCTGAAAGTGAGCTGAAGAAGCTGAAAGGTCAATTAAAGAACTGTTGACAGGGGTGACCCCCGGGTGACCTTGT
TCTACCCCTGCGCAATTCAACCAACAGCCGTTTACCTCATGACACACTTGAAGAGCTCCAAAGCAATTGAAAGCAATTGATGT
CTAA

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>PAK5_h
CGGGAG

THE
FIG.

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Title: PAK5 SCREENING

METHODS

Inventor(s): Gregory PLOWMAN

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GEK?

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Fig. 11G

GCAGCAAGTGGAAAGATGGACAAAGACCCATGGCGGTGCCCCATGCCAGCTCAAGAGCAGCTCAAACCTGATGAAAGAGGTGAAGAACGAGGTGAGAAGCTCCCCGACAG
CAGCGGAAGGAAAGCATGAAAGAGCAACGGAGGAGATGGAGGAGAACGAGCTGGCATGAAAGGGCTGAGCTGGAGACACCCGACACGGAGATCTGACAAAGGAGCTGGAG
GCAGAAGGAGGACCTGGAGCTGGAGCTGGCATGAAAGGGCTGAGCTGGAGACACCCGACACGGAGATCTGACAAAGGAGCTGGAG
GCCTCATGAAAGCAAGGAGCTGGAGCTGGAGACGGAGGAGGAGCTGGAGATGGAGCTGGAGACACCCGACACGGAGATCTGACAAAGGAGCTGGAG
CACCAGCTGGTGAAGGCCAGCAGCTCAAAAGGACAGTACTTCTCAGCGGACGGAGCTGCTGCGCAAGGAGATGAGAAGGGCG
GGAGCAAGATGCCAGCCATGATAAGAGCAGCTGAAGGTGAGGAGCTGAGCTGAGGAGCTGAGGAGCTGAGGAGCTGAGGAGCTGAGGAGCTGAGGAG
AGATCCAGGGAGTGAAGGGCAAGAGCGGCATGCCATGCCCAGTGTACAAGAAAGAGCCCTCACATCAACGGGGCAGGGCAGGCT
GAGCAGGGTGAAGAGTCAAGAGCAAGCAAGTCTCCAGGAGGAGGAGAAGGGAGGAGAAGGGAGGAGAAGGGAGGAG
ACACGGAAACCAAGATGCCAGCATGCTGGGAGCATGAGGAGGAGCTGAGGAGCTGAGGAGCTGAGGAGCTGAGGAGCTGAGGAG
GCCACCTCTGGTAGAGCACGAAACCCAGAAACTGAAAGGGCTGGATGAGGAGCTGAGGAGCTGAGGAGCTGAGGAGCTGAGGAG
GACAAGCTTGGGGCAAGAGAAGGGCTGGAGAGGGATCTGAACCAAGAGAAGGGAGGAGGAGATGTTCTCAAGGCT
65 GAGGGAGGGAGTGGCCAAACCCCTCACCCCAAGCTTCCCCCAAGGAGTGGGATGCTT
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Fig. 11H

Title: PAK5 SCREENING

METHODS

Inventor(s): Gregory PLOWMAN

et al.

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STLK6_h	P S T R A S E - V L C S T N V S H Y E L Q V E I G R G F D N L T S V H L A R H T P T G T L V T T I K I	90
STLK5_h	- - - - -	9
SPAK_h	P A Q A V G W P I C R D A - - - Y E L Q E V I G S G A T A V - - - V Q A A L C K P R Q E R V A I K R	95
STLK7_h	- - - - -	35

STLK6_h	STLK5_h	SPAK_h	STLK7_h	140
T N L E N C N E E R L K A L Q K A V I L S H F F R H P N I I T Y W I V E T I V G S W [W V I S P F M A	T N L E A C S N E M V T S - C R A S C M F Q T L N H P N I V P Y R A T L I A D N E L W V V T S F M A	S H P N I V V T Y Y T S F V V K D E L W L V W K L L S	H H P N I V S Y T S F V V K D E L W L V M K L L S	58
T N L E K C Q T S M D E L L K E I Q A M S Q C -	T N L E K C Q T S M D E L L K E I Q A M S Q C -	S H P N I V V T Y Y T S F V V K D E L W L V W K L L S	H H P N I V S Y T S F V V K D E L W L V M K L L S	144
T N L E K C Q T S M D E L L K E I Q A M S Q C -	T N L E K C Q T S M D E L L K E I Q A M S Q C -	H H P N I V S Y T S F V V K D E L W L V M K L L S	H H P N I V S Y T S F V V K D E L W L V M K L L S	84

STLK6_h	Y G S A S Q [L R T Y F P E G - - - - -	[M S E T T I R N I L F G A V R [G L N Y L H Q N G C I H R S	184
STLK5_h	Y G S A K [D L I C T H F M D G - - - - -	- M N E L A I A Y I L Q G V L K A L D Y I H M G Y V H R S	102
SPAK_h	[G G S M L D I I K Y I V N R G E H K N G V L E E A I I A T I L K E V L E G L D Y L H R N G Q I H R D		194
STLK7_h	[G G S V L D I I K H I V A K G E H K S		103

Fig. 12A

Title: PAK5 SCREENING
METHODS

Inventor(s): Gregory PLOWMAN

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STLK6_h	<chem>LSPELLRQDTHGYNVKSDIYSVGITACELASGQVPFQDMHRTQMLLQKLK</chem>	282
STLK5_h	<chem>LSPEVLQQNLDGYDAKSDIYSVGITACELANGHVPFKDMPATQMLLEKLN</chem>	200
SPAK_h	<chem>MAPEVMEQ-VRGYDFKADMWSFGITATELATGAAAPYHKYPMMKVLMITLQ</chem>	289
STLK6_h	<chem>GPPYSPLDISIFPQSRSRMKNSQSGVDSGIGESVLTVSSGTHTVNSDRLHT</chem>	332
STLK5_h	<chem>GTVPPCLLDTSITPAEELTMSPSRSSVANSGLSDS-LTTSPRPSNGDSPSH</chem>	249
SPAK_h	<chem>NDPPT-----LETGV--ED</chem>	301
STLK6_h	<chem>PS-SKTFSPAFFSLVQCLQDPEKRPSSASSLSHVFFKQMKEEQSQDSIL</chem>	381
STLK5_h	<chem>PY-HRIFSPHFHHFVEQCLQRNPDARPSASTLLNHSFFKQIKRRASEALP</chem>	298
SPAK_h	<chem>KEMMKYGKSERKQLLSLCLQDKPSKRPATAELLKCKFQKAKNREY--LI</chem>	349
STLK6_h	<chem>SLPPAYNKPSSISLPPVLPWTEP-----ECDFPDEKDSSYWEF</chem>	418
STLK5_h	<chem>ELLRPV--TPITNFEGSQSQDHSGIFGLVTNLEELEVDDWEF</chem>	338
SPAK_h	<chem>EKLTRTPDIAQRAKKVRVPGS-----SGHLHKTEDGDDWEWSDDDEMDEK</chem>	394
SPAK_h	<chem>SEEGKAAFSQEKSRRVKEENPEIAVSASTIPEQIQSLSVHDSQGPNAME</chem>	444
SPAK_h	<chem>DYREASSCAVNLVLRNNSRKEELNDIRFEFTPGRDTADGVSQELFSAGLV</chem>	494
SPAK_h	<chem>DGHDVVIVAAANLQKIVDDPKALKTLLTFKLASGCDGSEIPDEVKLIGFAQL</chem>	544
SPAK_h	<chem>SVS</chem>	547

Title: PAK5 SCREENING
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et al.

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PAK1_h U51120 M S N N G L D I Q D K P P A P P M R N I S T M I G A G S K D A G T L N H G S K P L P P N P E E K K K D R F Y R S I L P 60
PAK4_h ----- 0
PAK5_h ----- 0

PAK1_h U51120 G D K T N K K E K E R P E I S P S D F E H T I H Y G F D A V T - G E F G M P E Q W A R I L Q T S N I T K S - - - 115
PAK4_h - - - M F R K K K K R P E I S A P Q N F Q H R V H T S F D P K E G K F V G L P P Q W Q N I L D - T R R P K P V V D P 56
PAK5_h - - - M F - G K R K K R V E I S A P S N F E H R V H T G F D Q H E Q K E T G L P R Q W Q S T I E S A R R R P K P V V D P 56

PAK1_h U51120 - - - - - 115
PAK4_h S R I T R V Q L Q P M K T V V R G S A M P V D G Y T S G L I N D T I Q K S V I S S N T L R G R S P T S R R A Q S L G L 116
PAK5_h A C I T S I Q P G A P K T I V R G S K G A K D G A T I L L D E F E N M S V T R S N S L R R D S P P P P A R A R - - - 112

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PAK1_h U51120 - - - - - 115
PAK4_h L G D E H W A T D P D M Y L Q S P Q S E R T D P H G L Y L S C N G G T P A G H K Q M P W P E P Q S P R V L P N G L A A K 176
PAK5_h - - - - - Q E N G M P E E P A T T A R G G P G K 131

PAK1_h U51120 - - - - - 115
PAK4_h - E Q K K N P Q A V V D V 127
PAK5_h S E E A R P Q S C C Y G S 236

PAK1_h U51120 - - - - - 115
PAK4_h A Q S I L G P A E F Q G A S Q R C L Q L G A C L Q S S P P G A S P P T G T N R H G M K A A K H G S E E A R P Q S C C Y G S 236
PAK5_h A G S R G R - - - - - Q E N G M P E E P A T T A R G G P G K - - - L S G P 183

PAK1_h U51120 - - - - - 115
PAK4_h - E Q K K N P Q A V V D V 127
PAK5_h S E E A R P Q S C C Y G S 236

Fig. 13A

Title: PAK5 SCREENING METHODS

Inventor(s): Gregory PLOWMAN

Attorney Docket No.: 034536-0688
et al.

PAK1_h	U51120	E D D D D D D A T P P V I A P R P E H I K S V Y R S - - - V I E P L P V T P T R D V A T S P T S P T E N N T I 230
PAK4_h		D N P P S L V A K A Q S L P S D Q P V G T F S P L T T S D I S S P Q K S L R I A P A T G O L P G R S S D A G S P R T W H 356
PAK5_h		- - - - - S A G G L A I P O S S S S R P T A R G A P S P G V L - - - - - G P H A S E 268

PAK1_h	U51120	P-----PDA	-----T L N T E K Q K K P K W S D E E I	-----L E K I R S I V S Y G D P K K Y T R F E K I	276
PAK4_h		A Q I S T S N L Y L P Q D P T V A K G A - - -	-----L A G E D T G V V I T H E Q F K A A L R M V V D Q G D P R L L I D S Y V K I	413	
PAK5_h		P Q I A P P A - C T P A A P A V D G P D G P R S D Q R E P Q R Y S H E Q F R A A L Q V V D P G D P R S Y L D N F I K I	-----Q V V D P G D P R S Y L D N F I K I	327	

PAK1_h	U51120	GQGASGIVYTA GEGSTGIVCLARE GEGSTGIVCIA	EVAT[KQMN][QQQ[P MDLRKQQRRELLF MDLRKQQRRELLF [TNEILYMR[E FNEVIMRDYQH FNEVIMRDYQH ENPN[NEVNYLDSY ENPN[NEVNYLDSY ENPN[NEVNYLDSY LV	336
PAK4_h				473
PAK5_h				387

PAK1_h	U51120	GDELWVVMEMEYLAGGSLTDVVTETICMDGGQIAAVCRECLQALESHSNQVVIHRDIKSNDNL	396
PAK4_h		GDELWVVMEMEFLQGGALTDIVSQVRNEEQIATVCEAVLQALAYLHAQGVVIHRDIKSDSIL	533
PAK5_h		GDELWVVMEMEFLLEGGALTDIVHTRMNEEQIAAVCLAVLQALSVLHAQGVVIHRDIKSDSIL	447

PAK1_h	U51120	L[GMDGSVKL[DFFGFC[QI[PEQSKRSTWV[GTPYWMAP[EV[TRKAY[GPKVDIWSL[GIMVIE	456
PAK4_h		L[TDGRVKL[SDFGFC[QISKD[VPKRSVLV[GTPYWMAP[EV[TRKAY[GPKVDIWSL[GIMVIE	593
PAK5_h		L[THDGRVKL[SDFGFC[QISKD[VPRKSSLV[GTPYWMAP[EV[TRKAY[GPKVDIWSL[GIMVIE	507

PAK1_h	U51120	MIEGEPPYENENPLRALYIATINGTPEKLSAIFRDFLNRCEMDV[EKRGSSAKELL	516
PAK4_h		MVDGEPPYFSDSPVQAMKRLRDSPPKSHKVSPVLRDFLTERMLVRDPQERATAQELL	653
PAK5_h		MVDGEPPYFNEPPILKAMKVIIRDNIPPRILKNTHKVSPSLKGELDRLLVRDPAQRATAAELL	567

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Fig. 13B

Title: PAK5 SCREENING
METHODS

Inventor(s): Gregory PLOWMAN
et al.

Attorney Docket No.: 034536-0688

PAK1_h	U51120	Q H Q F L K I A K P S S L T P L I A A A K E A T K N N H
PAK4_h		D H P F L Q T G L P E C L V P L I Q Y R K Q E S T C
PAK5_h		K H P F L A K A G P P A S H W P L V R Q N R T R

RESIDUES THAT MATCH THE CONSENSUS NAMED CONSENSUS #1 EXACTLY.

BOX RESIDUES THAT MATCH THE CONSENSUS EXACTLY.

Fig. 13C

Title: PAK5 SCREENING

Inventor(s): Gregory PLOWMAN

et al.

Attorney Docket No.: 034536-0688

ZC4_h.pro
ZC1_h.pro

MAGPGGGWRDREWTDLGHLPDPTGIFSLDKTIIGLTYGRIVLGLHEKTGAF
MANDSPAKSIVDIDSLLRDPAGIFFELVEVVGNGTYGOVYKGRHVKGOL

ZC4_h.pro
ZC1_h.pro

IAV KV MNARK D E E D L R T E I N L L R K Y S F H K N I V S F Y G A F F K L S P P G O R H Q 100
AAIK V M D V T E D E E E I K L E I N M L K K Y S H H R N I A T Y Y G A F I K K S P P G H D D Q 100

L W M V M E L C A A G S V I D V R M T S N Q S	K E D W I A Y I C R E I I O G L A H L H A H R V I	150
L W M E F C G A G S I I D L V K N T K G N T	I S R E I I R G L A H L H I H H V I	150

ZC4_h.pro	HRDIKGQNVLLTHNAEVKLVD DFGVSAQVSR TNGRRNSFIGTPYWM ^{PEVI}	200
ZC1_h.pro	HRDIKGQNVLL TEN AEV KLVD FGVSAQ LD TRV GR RNTFIGTPYWM ^{PEVI}	200

HRDIKGQNVL
HRDIKGQNVL
LTHNAEVKLY
LTHNAEVKLY
DFGVSAQVS
DFGVSAQVS
SRINQRRNS
SRINQRRNS
FIGTPYWMAP
FIGTPYWMAP
EV1
EV1

D	C	D	E	D	P	R	R	S	Y	D	Y	R	S	D	V	W	S	V	G	I	I	A	E	G	A	P	P	L	A	E	V	I	R	E	S	A
C	A	C	D	E	N	P	D	A	T	D	Y	R	S	D	L	W	S	G	I	I	A	E	G	A	P	P	L	A	E	V	I	R	E	S	A	
A	C	D	E	N	P	D	A	T	D	Y	R	S	D	L	W	S	G	I	I	A	E	G	A	P	P	L	A	E	V	I	R	E	S	A		

D	C	D	E	D	P	R	R	S	Y	D	Y	R	S	D	V	W	S	V	G	I	T	A	I	E	M	A	E	G	A	P	P	L	A	E	V	I	R	E	S	A
A	C	D	E	N	P	D	A	T	Y	D	Y	R	S	D	L	W	S	G	I	T	A	I	E	M	A	E	G	A	P	P	L	A	E	V	I	R	E	S	A	

PTVKSSGWSRKFHNFMEKCTIKNFLFRPTSANMLQHPFVRDIKNERHVVE	300
PRLKSKWSSKKFFSEIEGGCLVKNYMQRPSSTEQLLKHPFIRDPNERQVRI	300

P	T	V	K	S	S	G	W	S	R	K	F	H	N	F	M	E	K	C	T	I	K	N	E	R	P	T	S	A	N	M	L	O	H	P	F	V	R	D	I	K	N	E	R	H	V	V	E	
P	R	L	K	S	K	K	W	S	K	K	F	S	E	I	E	G	G	C	V	K	N	Y	M	Q	R	P	S	T	E	Q	L	L	K	H	P	F	I	R	D	Q	P	N	E	R	Q	V	R	I

SLTRHLTIGI₁KKR
QLKD₁IDRTRK₁KRGEKDET₁YEYS₁SG₁SEE₁EV₁PE₁Q₁E₁GEPSS₁SIV₁N₁V₁P₁G₁E₁S

SLTRHLTIGI₁KKR
QLKD₁IDRTRK₁KRGEKDET₁YEYS₁SG₁SEE₁EV₁PE₁Q₁E₁GEP₁SS₁I₁V₁N₁V₁P₁G₁E₁S

CC4.h.pro **KVS** TLRQAAKRSPKRERAKSSWRPEKELSDLEARRQRRQRRWEDEFN 374
CC1.h.pro TLRDFLRLQQENKERSEALRRQQLLQEQQLREQEYKRQLLAERQKRIE 400

VS1ERQALAKRLESPRSRFRAKSSWRPEKLELSDELARRQRQRNEDIFN 374
TLLRDFLRLQQENKERSEALRRQQQLQEQQLREQEYKRQLLAERQKRIE 400

4_h.pro

QHEELKCVVKDKEDESSONDDEVENSIOAQEVQLEPLKPYISNPKKIEVOE
QKEQRRRLEQQRREARRQQEREQRRREQEKKRRLLEELERRKEEEE
424
450

Title: PAK5 SCREENING
METHODS

Inventor(s): Gregory PLOWMAN
et al.

Attorney Docket No.: 034536-0688

ZC4_h.pro RSPSVPPNNQDHAAHHVKFSSSV.PQRSLLEQAQKPIDIRQRSSQNRRQNWLA 474
ZC1_h.pro RRRAEEKRRVEREQEYIRRQLEEEQRHLEVLQQQLDQEQAMLECRWRE 500

ZC4_h.pro SGDSKHKILAGKTIQS.YCLTIIYISEVKKKEEEQEGMNNQKCOGAQVGLGPFGH 524
ZC1_h.pro MEEHRQAERLQRQLQQEQAYLLSILQHDHRRPHPQHSQQQPPPQQERSKPS 550

ZC4_h.pro CIWQLGESSSEESPVTGRRSQSPPYSTLIDQKLLVDIHVPDQEKFVGKIS 574
ZC1_h.pro FHAPEPKAHYEPADRAREVEDRFRKTNHSSSPEAQSKQTGRVLEPPVPSRS 600

ZC4_h.pro PPVYLTNEWVGYNALSEIIFRNNDWLTPAPPVIOPPEEDGDDYVELYDASADTD 624
ZC1_h.pro EFSNNGNSESVHPALQRPAAEPQVPPVRTTSRSPVLSRDRDSP1QGSQQQNSQ 650

ZC4_h.pro GDDDESNDTFEDTYDHANGNDIDLQVDOANDVCKDHDDDNNKFDVDDVN 674
ZC1_h.pro AGQRNSTSIEPRLLWERVEKLVPRPGSGSSSSGSQPGSHPGSQSGS 700

ZC4_h.pro NNYYEAPSCPRASYGRDGSCCKQDGYSRKGKEEAYRGYGSHTANRSHGG 724
ZC1_h.pro GERFRVRSSSKSEGSPSQRLENAVKKPEDKKEVFRPLKPADLTALAKELR 750

ZC4_h.pro AASEDNAAIGDQEEHAANIGSERRGSEGDGGKGVVRTSEESGAGLNGEE 774
ZC1_h.pro AVEDVRRPPHKVTDYSSSEESGTDEEDDDVEQEGADESTSGPEDTRAAS 800

ZC4_h.pro NCSEIDGPGLKRPASQDFFEVLOQEEPGGGNEASNAIDSGAAPSAPDHESDN 824
ZC1_h.pro STNLNSNGETESVKTMIVHDDESEPAINTPSKEGTLLIVRRTQSSASSSTLQKH 850

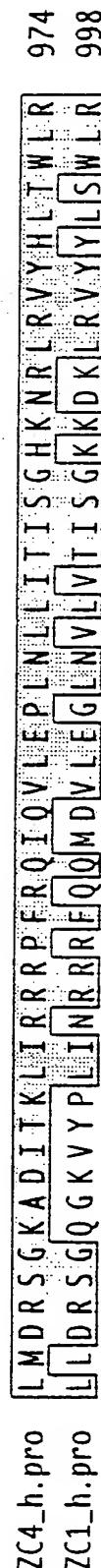
ZC4_h.pro KDISESSTQSDESANHSSPSKGGMSADANEASAILYAGFVEVPIEESPKQ 874
ZC1_h.pro KSSSSFTPFIDPRLLQISPSSSGTTVTSVVGESCDGMRPE - AIRQDPTRK 898

Title: PAK5 SCREENING
METHODS

Inventor(s): Gregory PLOWMAN
et al.

Attorney Docket No.: 034536-0688

ZC4_h.pro 

ZC4_h.pro 

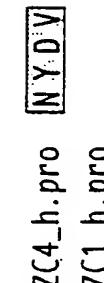
ZC4_h.pro 

ZC4_h.pro 

ZC4_h.pro 

ZC4_h.pro 

ZC4_h.pro 

ZC4_h.pro 

BOX RESIDUES THAT MATCH ZC4_h.pro EXACTLY.



Fig. 14C

Title: PAKS SCREENING

METHODS

Inventor(s): Gregory PLOWMAN
et al.

Attorney Docket No.: 034536-0688

Db = L0K1_m

Qy = GEK2_h

Db 1 MAFANFRRILSTFEKRSREYEHVRDLDPNDVWEIVGELGDGAFGKVYKAKKNKETGA 60
Qy 1 MAFANFRRILSTFEKRSREYEHVRDLDPNEVWEIVGELGDGAFGKVYKAKKNKETGA 60

Db 61 LAAAKVIETKSEEELEDYIVEIEILATCDHPYIVKLGLAYYYDGLWIMIEFCPPGAVDA 120
Qy 61 LAAAKVIETKSEEELEDYIVEIEILATCDHPYIVKLGLAYYHDGLWIMIEFCPPGAVDA 120

Db 121 IMLELDRGLTEPQIQVVVCRQMLEALNFLHGKRIIHRLKAGNVLMTLEGDIRLADFGVSA 180
Qy 121 IMLELDRGLTEPQIQVVVCRQMLEALNFLHSKRIIHRLKAGNVLMTLEGDIRLADFGVSA 180

Db 181 KNLKTLQKRDOSFIGTPYWWMAPEVVMAPEVVMCETMKGITLIELMAQIEPPHEL 240
Qy 181 KNLKTLQKRDOSFIGTPYWWMAPEVVMAPEVVMCETMKGITLIELMAQIEPPHEL 240

Db 241 NPMRYLLKIAKSDPPTLLTPSKWSVEFRDFLKIALDKNPETRPSAAQLLQHPFVSRVTSN 300
Qy 241 NPMRVLLKIAKSDPPTLLTPSKWSVEFRDFLKIALDKNPETRPSAAQLLEHPFVSSITSN 300

Db 301 KALRELVAEAKAEVMEEEEDGREGEEDAVPPPLVNHTQDSANVTQPSLDSNKLLQD 360
Qy 301 KALRELVAEAKAEVMEEEEDGREGEEDAVDAASTLENHTQNSSEVSPPSLNADKPLEE 360

Fig. 15A

Title: PAK5 SCREENING

METHODS

Inventor(s): Gregory PI OWMAN

et al.

Attorney Docket No.: 034536-0688
et al.

Db 361 S - S T P L P P S Q P Q E P V N G P C S Q P S G D G P L Q T T S P A D G L S K N D N D L K V P V P L R K S R P L S M D A 419
Qy 361 S P S T P L A P S Q S Q D S V N E P C S Q P S G D R S L O T T S P P V V A P G N E N G I A V P V P I R K S R P V S M D A 420

* * * * *

Db 420 RIQMDEEKQIPDQDENPSPAASKSQRPNSSALETLGGEALTNNGGLELPSSVTPSH 479
 Qy 421 RIQVVAQEKKQVAEQGGDLSPAANRSQKASQSRPNSSALETLGGEKLANGSLEPPAQAAPGP 480

Db 480 SKRASDCSNLSTSESMDYGTSSLNKEGTSSLKGSKLHNKTLLKTRRFVVDGVEV 539
Qy 481 SKRDSDCSSLCTSESMDYGTNLSTDLNKEMGSSIKDPKLYKKTLKTRKEVVDGVEV 540

Db 540 SITTSKII SED EKK D E M R F L R R Q E L R L L Q K E E H R N Q T Q L S S K H E L Q L E Q M H K R F E Q 599
541 SITTSKII SED EKK D E M R F L R R Q E L R L L Q K E E H R N Q T Q L S S K H E L Q L E Q M H K R F E Q 600
540v

Db 600 EINAKKKFYDVELNLERQQVEKMQQDHSVRRKEEAKRIRLEQDROYAKFQEQLKQM 659
 Qy 601 EINAKKKFDTLENLEROOKQOVEKMEODHAWRRREEARRIRIFOORDYTREOEVIKIM 660

Db 660 KKEVKSEVEKLPRQQRKESMKQKMEEHSQLDRDFVAKQKEDLELAMRKLTENRRE 719
 Qy 661 KKEVKNEVEKLPRQQRKESMKQKMEEHTQKKQQLLDRDFVAKQKEDLELAMKRLTTDNRRE 720

Title: PAK5 SCREENING METHODS

Inventor(s): Gregory PLOWMAN

Attorney Docket No.: 034536-0688
et al.

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Fig. 15C